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Ohio State University Bulletin

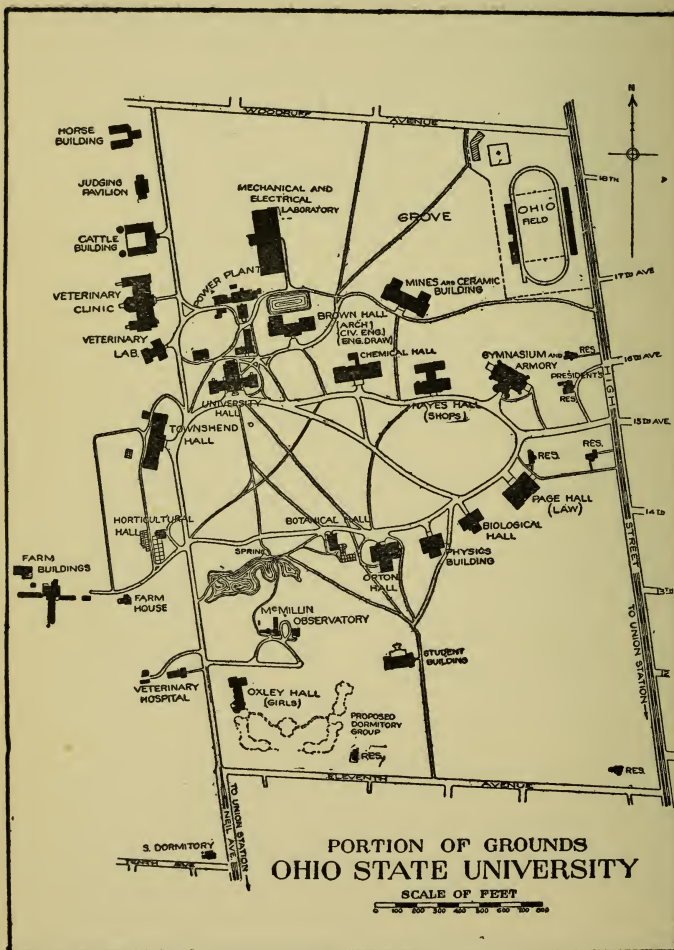
College of Arts Philosophy and
Science



OF THE
UNIVERSITY OF ILLINOIS

March 17, 1910

PUBLISHED BY THE UNIVERSITY AT COLUMBUS
Entered as second-class matter November 17, 1905, at the postoffice
at Columbus, Ohio, under Act of Congress, July 16, 1894.



OF THE
UNIVERSITY OF ILLINOIS

OHIO STATE UNIVERSITY

The Ohio State University, located in Columbus two miles north of the Union Station, is a part of the public educational facilities maintained by the State. It comprises seven colleges:

The College of Agriculture and Domestic Science,
The College of Arts, Philosophy, and Science,
The College of Education,
The College of Engineering,
The College of Law,
The College of Pharmacy,
The College of Veterinary Medicine.

This bulletin is devoted exclusively to the work of the College of Arts, Philosophy, and Science.

(NOTE: In requesting any of the announcement bulletins of the University, address the University Editor, Ohio State University, Columbus, Ohio.)

UNIVERSITY CALENDAR

1910

Entrance examinations (8 a. m.), Tuesday to Saturday, June 14 to 18.

Summer session, June 20 to August 12.

Entrance examinations (8 a. m.), Tuesday to Saturday, September 6 to 10.

First semester begins—Registration Day—Tuesday, September 13.

President's Annual Address (11 a. m.), Friday, September 16.

Latest date of admission to candidacy for a degree at the Commencement of June, 1910, Saturday, October 1.

Date for mid-semester reports to the Deans concerning delinquent students, Saturday, November 19.

Thanksgiving recess, November 24, 25, and 26.

Latest date for filing thesis subject, Thursday, December 15.

Christmas recess begins, Wednesday, December 21.

CHRISTMAS VACATION

1911

Christmas recess ends, Tuesday, January 3.

First semester ends, Friday, February 3.

Second semester begins—Registration Day—Monday, February 6.

Washington's Birthday, Wednesday, February 22.

Competitive Drill—Cadet Regiment—Saturday, May 27.

Date for mid-semester reports to the Deans concerning delinquent students, Saturday, April 1.

Final examinations, Friday to Thursday, June 2 to 8.

Latest date for presenting thesis, Saturday, June 3.

Entrance examinations (8 a. m.), Tuesday to Saturday, June 6 to 10.

Latest date for filing bound copy of thesis, Friday, June 9.

Commencement, Wednesday, June 14.

COLLEGE OF ARTS PHILOSOPHY AND SCIENCE

This College comprises those courses of study that are designed to furnish a liberal education in the languages and literatures, the sciences, mathematics, philosophy, history, politics, administration, economics, sociology, and commerce, as distinguished from the technical and professional courses which constitute the work of the other colleges.

DEPARTMENTS

The College of Arts, Philosophy, and Science includes work in the following departments: American History, Anatomy and Physiology, Astronomy, Bacteriology, Botany, Chemistry, Economics and Sociology, English, European History, Geology, Germanic Languages and Literatures, Greek Language and Literature, Latin Language and Literature, Mathematics, Military Science and Tactics, Philosophy, Physical Education, Physics, Political Science, Psychology, Romance Languages and Literatures, Zoology and Entomology. The following departments also offer a limited amount of work as elective studies in the College of Arts, Philosophy, and Science: Architecture, Art, Civil Engineering, Domestic Science, Engineering Drawing, Electrical Engineering, History and Philosophy of Education, Mechanical Engineering, Mechanics, Metallurgy and Mineralogy.

GRADUATE COURSES

The graduate instruction given in the College of Arts, Philosophy, and Science is organized in a Graduate School. A special bulletin describing the organization, admission requirements, and work of the Graduate School may be obtained on application to the University Editor.

THE LAKE LABORATORY

The University maintains a Lake Laboratory at Sandusky during the summer vacation, which is designed to provide opportunity for the investigation of the biology of the lake region, and for giving certain courses of instruction in the departments of Botany and Zoology and Entomology. For further information write for a special bulletin, which may be obtained from the University Editor.

BUSINESS ADMINISTRATION AND SOCIAL SERVICE

Students desiring to prepare themselves to pursue a business career or to engage in philanthropic work are invited to send for a special bulletin entitled Business Administration and Social Service.

FACULTY AND INSTRUCTORS

WILLIAM OXLEY THOMPSON, D. D., LL. D., PRESIDENT of the University.

JOSEPH VILLIERS DENNEY, B. A., DEAN and Professor of English.

HENRY RUSSELL SPENCER, Ph. D., SECRETARY and Professor of Political Science.

WILLIAM HENRY SCOTT, LL. D., Professor of Philosophy.

SAMUEL CARROLL DERBY, A. M., Professor of the Latin Language and Literature.

*JOSHUA RENICK SMITH, A. M., Professor of the Greek Language and Literature.

BENJAMIN FRANKLIN THOMAS, Ph. D., Professor of Physics.

GEORGE WELLS KNIGHT, Ph. D., Professor of American History.

* Absent on leave 1909-1910.

ROSSER DANIEL BOHANNAN, B. Sc., C. E., E. M., Professor of Mathematics.

ALBERT MARTIN BLEILE, M. D., Professor of Anatomy and Physiology.

BENJAMIN LESTER BOWEN, Ph. D., Professor of Romance Languages and Literatures.

WILLIAM MCPHERSON, D. Sc., Ph. D., Professor of Chemistry.

*HERBERT OSBORN, M. Sc., Professor of Zoology and Entomology, and Director of the Lake Laboratory.

HENRY CURWEN LORD, B. Sc., F. R. A. S., Professor of Astronomy, and Director of the Emerson McMillin Observatory.

CHARLES SMITH PROSSER, D. Sc., Ph. D., Professor of Geology.

JOHN ADAMS BOWNOCKER, D. Sc., Professor of Inorganic Geology, and Curator of the Museum.

ALFRED DODGE COLE, M. A., Professor of Physics.

WILBUR HENRY SIEBERT, M. A., Professor of European History.

LEWIS ADDISON RHOADES, Ph. D., Professor of Germanic Languages and Literatures.

DAVID R. MAJOR, Ph. D., Professor of Psychology.

CHARLES BRADFIELD MORREY, B. A., M. D., Professor of Bacteriology.

JAMES EDWARD HAGERTY, Ph. D., Professor of Economics and Sociology.

CHARLES A. BRUCE, B. A., Professor of Romance Languages and Literatures.

GEORGE WASHINGTON MCCOARD, M. A., Professor of Mathematics.

* Absent on leave 1909-1910.

ARTHUR WINFRED HODGMAN, Ph. D., Professor of the
Classical Languages and Literatures.

*WILLIAM EDWARDS HENDERSON, Ph. D., Professor of In-
organic and Physical Chemistry.

JOSEPH RUSSELL TAYLOR, M. A., Professor of English.

CHARLES WILLIAM FOULK, B. A., Professor of Analytical
Chemistry.

THOMAS HARVEY HAINES, Ph. D., Professor of Psy-
chology.

FRANCIS LEROY LANDACRE, B. A., Professor of Zoology
and Entomology.

WALLACE STEDMAN ELDEN, Ph. D., Professor of the
Classical Languages.

MATTHEW BROWN HAMMOND, Ph. D., Professor of Econ-
omics and Sociology.

HARRY WALDO KUHN, Ph. D., Professor of Mathematics.

GEORGE H. MCKNIGHT, Ph. D., Professor of English.

KARL DALE SWARTZEL, M. Sc., Professor of Mathematics.

ARTHUR ERNEST DAVIES, Ph. D., Professor of Philosophy.

JOHN H. SCHAFFNER, M. A., M. S., Associate Professor
of Botany.

JAMES STEWART HINE, B. Sc., Associate Professor of
Zoology and Entomology.

WILLIAM LUCIUS GRAVES, M. A., Associate Professor of
English.

EDGAR SHUGERT INGRAHAM, Ph. D., Associate Professor
of Romance Languages.

WILLIAM LLOYD EVANS, Ph. D., Associate Professor of
Chemistry.

*BERTHOLD AUGUST EISENLOHR, M. A., Associate Professor
of the Germanic Languages and Literatures.

* Absent on leave 1909-1910.

EUGENE FRANKLIN McCAMPBELL, B. S., Associate Professor of Bacteriology.

EDGAR HOLMES McNEAL, Ph. D., Associate Professor of European History.

FAYETTE AVERY MCKENZIE, Ph. D., Associate Professor of Economics and Sociology.

JAMES RENWICK WITHROW, Ph. D., Associate Professor of Chemistry.

EDMUND SEWALL MANSON, JR., S. M., Associate Professor of Astronomy.

RAYMOND JESSE SEYMOUR, M. S., M. D., Associate Professor of Anatomy and Physiology.

HOMER C. HOCKETT, B. L., Associate Professor of American History.

CARSON SAMUEL DUNCAN, M. A., Assistant Professor of English.

WALTER THOMPSON PEIRCE, Ph. D., Assistant Professor of Romance Languages.

JOHN B. PRESTON, M. A., Assistant Professor of Mathematics.

ROBERT F. GRIGGS, M. A., Assistant Professor of Botany.

FREDERICK COLUMBUS BLAKE, Ph. D., Assistant Professor of Physics.

OLIVER CARY LOCKHART, M. A., Assistant Professor of Economics and Sociology.

WALTER LARABEE LEIGHTON, Ph. D., Assistant Professor of English.

ARCHIBALD MOWBRAY BURNHAM, M. Ph., Assistant Professor of English.

LOUIS ALBION COOPER, B. A., Assistant Professor of English.

ROBERT F. EARHART, Ph. D., Assistant Professor of Physics.

WALTER JAMES SHEPARD, B. A., Assistant Professor of Political Science.

CLARENCE PERKINS, Ph. D., Assistant Professor of European History.

ALFRED DACHNOWSKI, Ph. D., Assistant Professor of Botany.

WILLIAM FRANKLIN GEPHART, Ph. D., Assistant Professor of Economics and Sociology.

CHARLES CLIFFORD HUNTINGTON, M. A., Assistant Professor of Economics and Sociology.

ALPHEUS WILSON SMITH, Ph. D., Assistant Professor of Physics.

EDWIN POE DURRANT, M. A., Assistant Professor of Anatomy and Physiology.

THEODORE ELY HAMILTON, Ph. D., Assistant Professor of Romance Languages.

CHARLES E. BLANCHARD, LL. B., Assistant Professor of English.

NATHANIEL WRIGHT LORD, E. M., Professor of Metallurgy and Mineralogy.

OLIVE JONES, B. A., Librarian.

WILLIAM THOMAS MAGRUDER, M. E., Professor of Mechanical Engineering.

GEORGE L. CONVERSE, Captain (Retired), U. S. A., Professor of Military Science and Tactics.

FRANCIS CARY CALDWELL, A. B., M. E., Professor of Electrical Engineering.

ALFRED VIVIAN, G. Ph., Professor of Agricultural Chemistry.

JAMES ELLSWORTH BOYD, M. S., Professor of Mechanics.

THOMAS EWING FRENCH, M. E., Professor of Engineering Drawing.

FRANK PIERREPONT GRAVES, Ph. D., Professor of the History and Philosophy of Education.

H. SHINDLE WINGERT, M. D., Professor of Physical Education.

RUTH AIMEE WARDALL, M. A., Professor of Domestic Science.

CHARLES LINCOLN ARNOLD, M. Sc., Associate Professor of Mathematics.

SAMUEL EUGENE RASOR, M. A., M. S., Associate Professor of Mathematics.

MARY R. LAVER, Associate Professor of Art.

GEORGE D. HUBBARD, Ph. D., Assistant Professor of Geology.

MAY THOMAS, Ph. D., Assistant Professor of Germanic Languages and Literatures.

ADOLF BUSSE, Ph. D., Assistant Professor of Germanic Languages and Literatures.

JOHN R. CHAMBERLIN, Assistant Professor of Civil Engineering.

CHARLES CLEMENTS MORRIS, M. A., Assistant Professor of Mathematics.

GRACE MARIE BAREIS, B. A., Assistant Professor of Mathematics.

CHARLES SHEARD, M. A., Assistant Professor of Physics.

FREDERICA DETMERS, M. Sc., Instructor in Botany.

SARAH TRACY BARROWS, M. L., Assistant Professor of Germanic Languages and Literatures.

ROBERT OSCAR BUSEY, M. A., Instructor in German.

VITTORIO FALORSI, D. L., Instructor in Romance Languages.

WILLIAM CLIFFORD MORSE, M. A., Instructor in Geology.

J. THOMAS KIBLER, Assistant in Physical Education for Men.

EXECUTIVE COMMITTEE

THE DEAN, *ex officio*; THE SECRETARY, *ex officio*;
PROFESSOR BLEILE, PROFESSOR COLE, PROFESSOR BRUCE, and
PROFESSOR HAINES.

ADMISSION

Applicants for admission must be at least sixteen years of age. The College is open on equal terms to both sexes.

UNIVERSITY ENTRANCE BOARD.

The admission of students is in charge of the University Entrance Board, which determines the credits which shall be issued on all entrance examinations and certificates, and furnishes all desired information to applicants. Correspondence relating to admission should be addressed to the Entrance Board, Ohio State University, Columbus.

ADMISSION TO COURSES LEADING TO A DEGREE

There are two modes of admission—by examination and by certificate.

ADMISSION BY EXAMINATION

The Entrance Board will conduct entrance examinations June 14 to 18 and September 6 to 10, 1910. A part of the examinations may be taken in June and the remainder in September. All applicants for admission who are not graduates of an accredited or recognized secondary school or approved preparatory school, or who do not possess certificates from the State Board of School Examiners, must take examinations for admission.

SCHEDULE.—Examinations will be from 8 to 12 a. m. and from 1 to 5 p. m.

Tuesday,	A. M.	History: Greek and Roman, English, General.
Tuesday,	P. M.	Composition and Rhetoric, Classics, Chemistry, Geology.
Wednesday,	A. M.	Algebra, German.
Wednesday,	P. M.	Plane Geometry, Physical Geography.
Thursday,	A. M.	Civics, Solid Geometry, Zoology.

Thursday,	P. M.	Beginning Latin, Caesar, Astronomy, Elements of Agriculture, Trigonometry.
Friday,	A. M.	Physics, Physiology, Botany.
Friday,	P. M.	U. S. History, French, English Literature.
Saturday,	A. M.	Vergil, Cicero, Domestic Science.

ADMISSION BY CERTIFICATE

Applicants may be admitted without examination on presentation of properly indorsed certificates from such secondary schools as have been accredited or recognized by the University, or from approved normal schools, or from the State Board of School Examiners under the following provisions:

(a) If from secondary schools, the certificate must show that the applicant is a graduate in good standing of the school issuing it; and also must state in detail the studies pursued, the text-books used, the amount of work done in each study, the amount of time devoted to it, and the fact that the applicant has passed in the work.

(b) Any entrance requirement not covered by a certificate must be met by examination.

Blank certificates may be obtained by addressing the Secretary of the Entrance Board. Certificates should be filled out and returned to the University by the proper school official as early as possible after the close of schools in June.

REQUIREMENTS BY UNITS

A unit is the equivalent of a course of study covering a school year of not less than thirty-six weeks, with five periods of at least forty-five minutes each per week. To obtain full standing, applicants under twenty-one years of age must have credit by examination or certificate for fifteen units—of which three shall be English, one history,

two mathematics, one physics or chemistry, and four language other than English—selected from the following list:

English..... 3 units
(Foreign students may substitute their native language for the English requirement.)

American History or American History and Civil Government 1 unit

Ancient History (Greek and Roman) and Medieval History to 814 A. D..... 1 unit

Medieval and Modern History (from 814 A. D. to the present)..... 1 unit

(For the present General History may be counted as a unit, but not in addition to Ancient or Medieval and Modern History.)

English History 1 unit

Algebra (through quadratics)..... 1 unit

Algebra (beyond quadratics)..... $\frac{1}{2}$ unit

Geometry (plane) 1 unit

Geometry (solid) $\frac{1}{2}$ unit

Trigonometry $\frac{1}{2}$ unit

Latin 2, 3, or 4 units

Greek 2, 3, or 4 units

German 2, 3, or 4 units

French 2, 3, or 4 units

Spanish 2, 3, or 4 units

(Not less than two units of any language will be accepted.)

Physics 1 unit

Chemistry 1 unit

Physical Geography 1 unit

Zoology 1 unit

Botany 1 unit

Physical Geography	}	For the present any two of these may be counted together as..... 1 unit
Zoology		
Botany		
Physiology		

Agriculture	}	The Entrance Board may, after investigating each claim, grant a total credit of not to exceed 2 units
Free-hand Drawing		
Manual Training		
Domestic Science		

Preparation in excess of the requirements in any subject will not be credited unless it amounts to one-half unit.

No student under twenty-one years of age will be admitted to college if he is conditioned in more than two of the fifteen units. All entrance conditions must be removed within two years after admission.

Students over twenty-one years of age are admitted in accordance with the provisions stated under "Admission to Special Studies," page 17.

The extent and character of the work required in each subject mentioned above is explained in a special bulletin which will be sent to any address upon request. In general it may be stated that the definitions of the North Central Association of Colleges and Secondary Schools are accepted as our definitions.

ADMISSION WITH ADVANCED STANDING

Applicants who have completed at least one year's work in an approved college, and who bring official and explicit certificates describing their courses of study and scholarship, and letters of honorable dismissal, will be admitted in accordance with either of two plans:

(1) The entrance units on which the candidate was admitted to the approved college will be accepted at their face value; deficiencies will be made up from the college credits presented, and advanced credit will be given for any remaining satisfactory work; or

(2) One year's work will be accepted in lieu of entrance units and the candidate will be admitted without examination and without conditions, but without any advanced standing on the year's work.

Applicants who have completed less than one year's work in an approved college must satisfy the entrance requirements in the usual way, and will then be given credit for any satisfactory work for which they can offer certificates.

ADMISSION TO SPECIAL STUDIES

Students who desire to pursue special lines of work and do not desire to become candidates for a degree, will be admitted on the following conditions:

1. The regular entrance requirements must be satisfied.
2. But applicants who are not less than twenty-one years of age, after obtaining credit for the common English branches and for such other subjects as may be necessary to qualify them for the classes that they wish to enter, may, on the presentation of satisfactory reasons, be admitted to any class in the college; provided, that if any student who has been admitted on these conditions afterwards becomes a candidate for a degree, he shall pass the omitted entrance examinations at least twelve months before the degree is conferred.
3. Before entering the College, students desiring to pursue special work are required to lay before the Executive Committee, for approval or modification, a written statement of the end they have in view, the studies proposed for the attainment of that end, and the probable period of attendance. Such students will be held as strictly to their accepted schemes of work as are the regular undergraduates to the course of study.
4. Permission to enter as special undergraduates will be refused to all who fail to give satisfactory evidence of definiteness of purpose, and will be withdrawn whenever the conditions on which it was granted cease to exist.

ADMISSION TO GRADUATE WORK

A special bulletin devoted exclusively to the Graduate School may be obtained on application to the University Editor.

REMOVAL OF ENTRANCE CONDITIONS

The removal of entrance conditions is administered by the Entrance Board. Conditions may be removed (1) by

examination (for schedule of examinations, see page 13); or (2) by the substitution of excess work in other approved subjects; or (3) by the substitution of other equivalent work to be done at the University. All entrance conditions must be removed before the beginning of the third year of residence at the University.

REQUIREMENTS FOR GRADUATION

UNDERGRADUATE COURSES OF STUDY

The work of the College of Arts, Philosophy, and Science is organized on the group-elective system. Several of the groups correspond in their chief studies and learning aims to the "courses"* formerly offered, but with much greater flexibility and much freer opportunities for election. Many other "courses" having equally specific aims are also provided in the groups. The groups, so far as at present arranged, number twelve. This number will be increased as reasonable demand may arise for new groups. The characteristic features of each group may be judged from its name, which is made up of the names of the chief studies of the group. The groups at present recommended are given on pages 22 to 25.

About one-third of every student's curriculum is prescribed. Each student is required to lay sufficiently broad foundations, during the first two years, in English, in two other languages to be chosen by himself, in mathematics and one science, or in two sciences to be chosen by himself, and in history, economics, English, or philosophy. The remaining two-thirds of each student's work is elective; but in order to insure substantial results in the studies thus freely chosen, the student is required to continue two of his first-year studies (any two) through the second year,

* Arts or Classical, Latin Philosophy, Modern Language Philosophy, English Philosophy, General Science, Commerce and Administration, Education, Preparatory to Law, Preparatory to Medicine, Preparatory to Journalism.

one of his second-year studies (any one) through the third year, and one of his third-year studies (any one) through the fourth year. In order to guard against the danger of too narrow or too wide a range of work, a maximum and a minimum number of departments is fixed in which the student is allowed to work during any one year. In the first and second years the number of departments thus fixed is four or five; in the third and fourth years the number is three or four.

SUMMARY AND REQUIREMENTS

On satisfactory completion of 120 hours under the restrictions prescribed below, the student will be recommended for the Degree of Bachelor of Arts.

The 120 hours must include the following, amounting to 38 hours:

- (a) English 101 and 104. (2-2) 4 hours.
- (b) Two of the following languages: (8-8) 16 hours.
Greek 101-102, or 105-106; Latin 101-102;
French 101-102, or 103-104; German 101-102, or
103-104; Spanish 101-102, or 103-104.
- (c) Mathematics 131-132 and 123-124. (6-6) 12 hours, or
Two of the following: at least (6-6) 12 hours.
Mathematics 121-122; Physics 105-106, or 103-104;
Chemistry 105-106, or 109-110; Botany 101-102;
Zoology 101-102;
Geology 101-102; Physiology 101-102; Astronomy 101-102.
- (d) One of the following: (3-3) 6 hours.
European History 101-102, or 103-104; American History 101-102;
Political Science 101-102; Economics 131-134;
Psychology 101-102; Philosophy 171-172; English 131.

For the remaining 82 hours required for graduation the student may elect from any courses announced in this College (see page 27 and following) for which he is qualified.

FIRST YEAR

(a) Fifteen or sixteen hours each semester, chosen from the prescribed work indicated above, including English 101-104.

(b) Cadet Service and Physical Education (men); Hygiene and Physical Education (women); required throughout the first year.

SECOND YEAR

(a) Fifteen or sixteen hours each semester. This must include all the prescribed work not done in the first year; the other work of the second year to be in three or four departments of which at least two shall be departments in which the student has worked during the first year.

(b) Cadet Service (men); Hygiene and Physical Education (women); required throughout the second year.

THIRD YEAR

Fifteen or sixteen hours each semester in three or four departments, at least one to be a department in which the student has worked during the second year.

FOURTH YEAR

Fifteen or sixteen hours each semester in three or four departments, at least one to be a department in which the student has worked during the third year.

EXTRA HOURS

A student who has postponed a study in group (b) from the first to the second year, may take sixteen hours in the second year, and by the permission of the Executive Committee a student who has shown exceptional proficiency may be allowed to undertake from one to three extra hours;

but in no case will any student be permitted to take more than eighteen hours. No extra hours will be granted to a first-year student, or to any student with conditions outstanding.

RULE GOVERNING ELECTIONS

Each student enrolled in the College of Arts, Philosophy, and Science must file at the Registrar's office not later than June 1st of each year a complete statement of the courses he wishes to enter the following year. Blanks for this purpose may be obtained of the Registrar.

FEE FOR CHANGES IN SUBJECTS OR SCHEDULE

After ten days from registration day changes in subjects or schedule, if made at the instance of the student, shall be made only upon the payment of a fee of \$1.00 for each change. Requests for changes for the second semester must be filed with the College Secretary on or before the third day of the term, or the fee of \$1.00 will be assessed for each change made at registration at the request of the student.

STUDENT ADVISERS

The Faculty of Arts, Philosophy, and Science has provided a system of advisers, the chief objects of which are: (1) to assist the undergraduate in choosing studies that will result in a well-rounded course and will achieve most economically the purpose which the student has in view in his course; (2) to promote closer personal relations between student and instructor and thus to aid the student, so far as possible, in all matters connected with his university life. On entering the University each student is assigned by the Executive Committee to a temporary adviser to whom he is cordially invited to resort for counsel as often as the need arises. Before the close of the year

each student chooses a permanent adviser. Each student is required to secure the signature of his adviser to his election-card in June of each year, and to petitions, at any time during the year, for a change in work or for increase or diminution of work.

FIRST-YEAR OPTIONS

In order to meet the requirements for graduation, the first-year student must arrange his work on one of the following plans:

I. English; two languages; two sciences, or mathematics and one science, or mathematics alone; deferring until the second year the selection from group (d) above.

II. English; two languages; mathematics or science; one subject from group (d); deferring until the second year a second subject from group (c) above.

III. English; one language; two sciences, or mathematics and one science, or mathematics alone; one subject from group (d); deferring until the second year the second language from group (b) above.

In order to assist the student in his choice of work for the first two years, more specific directions are given below in connection with various natural groupings of studies. *These groups are not mandatory.* The student may make other combinations than those suggested, provided his selection of studies fulfills one of the three options given above. In the second year many other combinations are possible. The time schedule, however, is arranged primarily to fit the combinations recommended. The days and hours at which each study is taught may be found by looking up that study on page 27 (et seq.) of this Bulletin. The title of a group indicates the chief studies of that group.

STUDY GROUPS

1. CLASSICAL. First year: Greek 101-102 or 105-106; Latin 101-102; English 101-104; either 6 hours in (c) or 3 hours in (c)

and 3 hours in (d). Second year: Greek 105-106 or 107-108; Latin 103-104; begin or continue a modern language, a science and a study in Economics, History, Political Science or Sociology. Before choosing work in (3) or (d), read groups 4 to 12.

2. LATIN, MODERN LANGUAGE. First year: Latin 101-102; French 101-102 or 103-104, or German 101-102 or 103-104; English 101-104, either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Latin 103-104; French or German; English; begin or continue a science and a study in Economics, History, Political Science, or Sociology. Before choosing work in (c) or (d), read groups 4 to 12.

3. MODERN LANGUAGES. First year Begin or continue French and German. *Not more than one new language should be begun in the first year.* English 101-104; either 6 hours in (c) or 3 hours in (c) and 3 hours in (d). Second year: Continue French and German; begin or continue a science and a study in Economics, History, Political Science or Sociology; add English 131. Before choosing work in (c) or (d), read groups 4 to 12.

4. GENERAL SCIENCE. First year: French 101-102 or 103-104, or German 101-102 or 103-104; Chemistry 105-106 or 109-110; Mathematics 121-122; English 101-104; 3 hours in (d). Second year: A second modern language; a study in Economics, English, History, Political Science, or Sociology; one of the following: Astronomy, Chemistry, Physics; one of the following: Botany, Geology, Physiology, Zoology; the remaining time in Mathematics or Science. Students intending to specialize in Chemistry should continue that subject the second year of the course. Those who have Geology in view should take Geology 101-102 and 103-104 in their second year.

5. MATHEMATICS, PHYSICS, ASTRONOMY. First year: Mathematics 131-132, 123-124; French 101-102 or 103-104, or German 101-102 or 103-104; English 101-104; 3 hours in (d). Second year: Mathematics 141-142; Physics 103-104; Chemistry 105-106 or 109-110; English and a second modern language (German or French). Third year: Astronomy 101-102; Physics 121-122; and either Astronomy 103-104 or additional work in Physics 121-122; an additional science (3 hours); English or History 2 or 3 hours; German or French unless each has been studied two full years. Instead of Mathematics 131-132, 123-124 in the first year, Chemistry 105-106 or 109-110 and Mathematics 121-122 may be chosen, and be followed by Mathematics in the second year.

6. BIOLOGICAL SCIENCES. First year: French 101-102 or 103-104, or German 101-102 or 103-104; Chemistry 105-106 or 109-110; Botany 101-102, or Zoology 101-102; English 101-104; 3 hours in (d). Second year: Botany; Zoology 101-102 or 103-104; Physiology 101-102; Geology 101-102, or Mathematics 121-122, or Physics 105-106; and a second modern language. Students preparing for medicine should take Zoology 101-102 in the first year and Zoology 103-104 and Physiology 101-102 in the second year.

7. ECONOMICS, HISTORY. First year: Include European History 101-102, or Economics 131-134; English 101-104; French 101-102 or 103-104, or German 101-102 or 103-104; 6 hours in (c). Second year: Include Economics 131-134 or 135-136; European History 101-102 or 103-104; American History 101-102, or Political Science 101-102; 4 hours in (b). In each of the third and fourth years include two courses in Economics and one in History, or two in History and one in Economics.

8. HISTORY, POLITICAL SCIENCE, ADMINISTRATION. First year: Include European History 101-102 or 103-104, or American History 101-102; English 101-104; 6 hours in (b), including French 101-102 or 103-104, or German 101-102 or 103-104; 3 hours in (c). Second year: Include Political Science 101-102 and the course in History not taken the first year, and Economics 135-136; 3 hours in (c). The student who has not a reading command of French or German should continue the modern language of the first year. In each of the third and fourth years include either two courses in History and one in Political Science, or one course in History and two in Political Science; and in one of these years Economics 141-142.

9. GENERAL BUSINESS. First year: Include Economics 131-134; English 101-104; Geology 101-102; Mathematics 121-122; and one of the following: French 101-102 or 103-104; German 101-102 or 103-104, or Spanish 101-102 or 103-104. Second year: Include Economics 135-136; English 131; Chemistry 105-106 or 109-110, or Physics 105-106 or 103-104; American History 101-102, or European History 101-102; begin or continue a modern language.

10. SOCIOLOGY, PHILOSOPHY. First year: Include Economics 131-134; English 101-104; Physiology 101-102; Zoology 101-102; and French 101-102 or 103-104, or German 101-102 or 103-104. Second year: Include Economics 135-136; English 131; Physiology 101-102 and Philosophy 171-172; American History 101-102, or European History 101-102; begin or continue a modern language.

11. PHILOSOPHY, EDUCATION. First year: Follow suggestions in Study Group 1, 2, or 3, except that only three hours be taken in (c), and that Psychology 101-102 and Philosophy 171-172 be taken as the subject in (d). Second year: Include Philosophy 177-178; begin or continue a modern language, a science in (c) and a study in Economics, History, Political Science or Sociology.

12. GENERAL LITERATURE. First year: Continue both languages offered for admission: English 101-104; 3 hours in (c); European History 101-102. Second year: Begin or continue a modern language, a science and two courses in History, including European History 103-104; English 131. Take a course in Philosophy throughout the third year.

THE ARTS-LAW COURSE

A candidate for the degree of Bachelor of Arts while registered in the College of Arts, Philosophy, and Science may also register in the College of Law as a candidate for the degree of Bachelor of Laws, *provided* that at the time of seeking such registration in the College of Law (1) he has 90 hours to his credit in the College of Arts, Philosophy, and Science, including the requisite optional subjects, and exclusive of the credit hours in Military Drill and Physical Training, and (2) has been a student in the College of Arts, Philosophy, and Science of this University at least one year, and (3) has included (or with the further work in the College of Arts, Philosophy, and Science mentioned in the next paragraph shall complete) sufficient courses to amount to twenty hours in one or more of the five subjects: American History, European History, Economics, Sociology, and Political Science.

A student so registered in the two colleges must during his first year of double registration complete sufficient further work in the College of Arts, Philosophy, and Science to make his credits in that college aggregate 100 hours, exclusive of the credit hours in Military Drill and Physical Training. When he has done this and has completed in the College of Law the first year of the course for the degree

of Bachelor of Laws, he will be recommended for the degree of Bachelor of Arts; and when he has completed the second and third years of such course in the College of Law, he will be recommended for the degree of Bachelor of Laws.

Application to enter the combined course must be filed with the Dean of the Arts College before registration day at the beginning of the year in which the student is eligible to enter the combined work.

No credit in the College of Arts, Philosophy, and Science will be given for work done in the College of Law except as above provided, but regular fourth-year students in the former college may by special permission take a limited amount of the work in the College of Law without credit in the College of Arts, Philosophy, and Science.

The work of all students taking studies in the two colleges at the same time is under the jurisdiction of a joint committee, consisting of Professor Denney, Dean of the College of Arts, Philosophy, and Science; Professor Adams, Dean of the College of Law; Professors Siebert, Page, and Bruce.

GRADUATE COURSES

A special bulletin devoted to the work of the Graduate School may be obtained on application to the University Editor.

ANNOUNCEMENTS OF DEPARTMENTS

AMERICAN HISTORY

(Office, Room 207, University Hall)

PROFESSOR KNIGHT, ASSOCIATE PROFESSOR HOCKETT

FOR UNDERGRADUATES

Equivalent term courses: 101-102=1; 103= $\frac{1}{2}$ of 2; 104= $\frac{1}{2}$ of 15; 105-106=12; 107-108=16; 109-110=7; 111-112=4; 113-114=6; 119-120=10; 201-202=13; 205-206=14.

101-102. POLITICAL HISTORY OF THE UNITED STATES. Three credit hours. The year. *M., W., F., at 8, 9, 11, or 1.* Professor KNIGHT, Associate Professor HOCKETT, Assistant Professor SHEPARD.

An outline course, covering the period 1600-1900, considering political, economic, and personal aspects of American history from the origins to the present day. The *Epochs* series, by Thwaites, Hart, and Wilson, and MacDonald's *Documentary Source Book of American History*, will be used as text-books, supplemented by outside reading in the works of Fiske, the *American Statesmen* series, and the *American Nation* series. Recitations and reports. This must precede all other courses in American history, and is not open to seniors.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

103. THE AMERICAN COLONIES, 1600-1763. Three credit hours. First semester. *M., W., F., at 2.* Associate Professor HOCKETT.

A course in the general history of the English colonies in America, with especial emphasis on European conditions affecting colonization, the development of the colonial political system, and relations with the mother country. Lectures, quiz, and reports.

104. THE HISTORY OF THE WEST. Three credit hours. Second semester. *M., W., F., at 2.* Associate Professor HOCKETT.

A study of the geographical and social factors which have affected the westward movement of population, and the influence of this migration in shaping American policies, institutions, and ideals. Lectures, quiz, and reports.

105-106. THE REVOLUTIONARY AND CRITICAL PERIOD, 1763-1787. Two credit hours. The year. *M., F., at 2.* Professor SPENCER.

An examination of the constitutional relations of the American colonies to the British empire; of the political, commercial, and

personal causes of the revolt, and the process by which they co-operated to bring about separation; of the radical movement and the reaction from it; of the constructive elaboration of written constitutions by the states and for the Union. Lectures, quiz, and reports.

107-108. CONSTITUTIONAL HISTORY OF THE UNITED STATES. Two credit hours. The year. *M., F., at 10.* Associate Professor HOCKETT.

A careful study of the origin and growth of the federal constitution. Beginning with the formulation of the constitution by the convention of 1787, the course follows its development as interpreted by the executive, congress, and the courts, in dealing with such questions as the acquisition of territory, internal improvements, the tariff, United States bank, slavery, relations of the nation and the states. Lectures, quiz, and reports.

*109-110. POLITICAL PARTIES IN THE UNITED STATES. Two credit hours. The year. *T., Th., at 2.* Given biennially.

A detailed study of the rise, progress, and decline of the several parties, with special reference to their social, geographical, and personal composition, and their effect on legislation and presidential elections. Lectures, quiz, and reports.

111. THE SLAVERY STRUGGLE to 1854. Three credit hours. First semester. *M., W., F., at 11.* Given biennially, alternating with course 113. Professor KNIGHT.

112. THE SLAVERY STRUGGLE AND ITS RESULTS, 1854-1900. Three credit hours. Second semester. *M., W., F., at 11.* Given biennially, alternating with course 114. Professor KNIGHT.

Courses 111 and 112 comprise a detailed study of the development of slavery in its connection with and influence upon the constitutional and political history of the country, the rise and fall of parties, and the divergence of the sections; its relation to the Civil War; the results of the struggle traced in the reconstruction of the southern states and the readjustment of society and the states to the new status of the negro. Lectures, quiz, and reports.

*113. THE HISTORY OF AMERICAN DIPLOMACY, 1776-1850. Three credit hours. First semester. Given biennially, alternating with course 111. Professor KNIGHT.

*114. AMERICAN DIPLOMATIC HISTORY AND PROBLEMS, 1850-1908. Three credit hours. Second semester. Given biennially, alternating with course 112. Professor KNIGHT.

*Not given in 1910-1911.

Courses 113 and 114 comprise a systematic study of the diplomacy and foreign relations of the United States; the birth, evolution, and variations of the foreign policy of the country, in territorial, commercial, and continental subjects, with a consideration of recent important diplomatic problems in this field. Lectures, quiz, and reports.

119. PROSEMINAR IN POLITICAL HISTORY. Two credit hours. First semester. Time to be arranged. Prerequisite, four semesters in American history. Associate Professor HOCKETT.

120. PROSEMINAR IN POLITICAL HISTORY. Two credit hours. Second semester. Time to be arranged. Prerequisite, four semesters in American history. Associate Professor HOCKETT.

The work of the Proseminar for the year 1910-1911 will be a coöperative study of party politics during the decade following the War of 1812.

EXCLUSIVELY FOR GRADUATES

*201. RECONSTRUCTION OF THE SOUTH, 1862-1870. Two hours. First semester. *Tu., Th., at 11.* Professor KNIGHT.

An intensive study of the reconstruction era, the action of the national executive and congress and the installation of the reconstructed state governments.

*202. POLITICAL HISTORY OF THE SOUTH, 1870-1900. Two hours. Second semester. *Tu., Th., at 11.* Professor KNIGHT.

A detailed study of the career of the reconstructed state governments, the failure and undoing of reconstruction, and the influence of the era upon national history.

203-204. THE UNITED STATES AND LATIN AMERICA, 1800-1905. Two hours. The year. *Tu., Th., at 11.* Professor KNIGHT.

A study of the diplomatic and political history, and of the problems and policies, of the United States in relation to Mexico, Central and South America, and Cuba. This course alternates biennially with courses 201 and 202.

205. GRADUATE SEMINAR IN AMERICAN HISTORY. Two hours. First semester. *Tu., at 4.* Professor KNIGHT.

206. GRADUATE SEMINAR IN AMERICAN HISTORY. Two hours. Second semester. *Tu., at 4.* Professor KNIGHT.

The field of investigation and coöperative study for 1910-1911 will be the administrations of Pierce and Buchanan.

*Not given in 1910-1911.

ANATOMY AND PHYSIOLOGY

(Office, Room 12, Biological Hall)

PROFESSOR BLEILE, ASSISTANT PROFESSOR SEYMOUR

Equivalent term courses: 101-102=1; 104=3; 105-106=4; 109-110=9; 111-112=11.

101-102. HUMAN ANATOMY AND PHYSIOLOGY. Three credit hours. The year. *M., W., F., at 8 or 9.* Must be preceded or accompanied by a course in chemistry. Professor BLEILE, Assistant Professor SEYMOUR.

104. CHEMICAL PHYSIOLOGY. Three credit hours. Second semester. *Th., F., 1 to 4.* Professor BLEILE.

105-106. HISTOLOGY AND HISTO-CHEMISTRY. Five credit hours. The year. *M., Tu., W., 1 to 4.* Professor BLEILE, Assistant Professor SEYMOUR.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

109-110. PHYSIOLOGICAL LABORATORY. Three credit hours. Time to be arranged. The year. Professor BLEILE.

111-112. PHYSIOLOGICAL LABORATORY. Five credit hours. Time to be arranged. The year. Professor BLEILE.

EXCLUSIVELY FOR GRADUATES

201-202. ADVANCED PHYSIOLOGY. Three hours. The year. Time to be arranged.

203-204. ADVANCED PHYSIOLOGY. Five hours. The year. Time to be arranged.

ANCIENT ART

(See Greek Language and Literature)

ASTRONOMY

(Office, Emerson McMillin Observatory)

PROFESSOR H. C. LORD, ASSOCIATE PROFESSOR MANSON

Equivalent term courses: 101-102=1; 104-105=2; 107-108=7.

101-102. GENERAL ASTRONOMY. Three credit hours. The year. *M., W., F., at 9.* For undergraduates. Associate Professor MANSON.

104-105. ASTRONOMY, GEODESY AND LEAST SQUARES. Three credit hours. The year. *M., W., F., at 11, and M., Tu., Th., at 10.*

This course begins in the second semester and continues through the first semester of the following year. Prerequisite, the calculus. Professor LORD, Associate Professor MANSON.

107-108. ADVANCED ASTRONOMY. Three to five credit hours. The year. Time to be arranged. Prerequisite, the calculus. Professor LORD.

BACTERIOLOGY

(Office, Veterinary Laboratory Building)

PROFESSOR MORREY, ASSOCIATE PROFESSOR McCAMPBELL, MR. GEORGE.

Equivalent term courses: 107=5; 108=7; 114=10; 116=11; 117-118=6; 119-120=12; 125=15.

These courses in Bacteriology are open to advanced undergraduates and graduate students only. The instructor in charge must be consulted before electing.

107. GENERAL BACTERIOLOGY. Three to five credit hours. First semester. Lecture, *Tu.*, at 9; quiz, *Th.*, at 9; laboratory, *Tu.*, *Th.*, or *W.*, *F.*, 1 to 4. Professor MORREY, Associate Professor McCAMPBELL, _____.

Making of media, cultures, staining methods, physiological properties.

108. PATHOGENIC BACTERIA. Three to five credit hours. Second semester. Same time as Bacteriology 107. Prerequisite, Bacteriology 107. Professor MORREY, Associate Professor McCAMPBELL, _____.

*114. WATER EXAMINATION, SEWAGE DISPOSAL, WATER FILTRATION. Three to five credit hours. Second semester. Prerequisite, 107. Lecture *Tu.*, at 11; quiz, *Th.*, at 11; laboratory, *M.*, *W.*, 1 to 4. Professor MORREY.

*116. BACTERIOLOGICAL CHEMISTRY (enzymes). Three to five credit hours. Second semester. One lecture, one quiz, two to six hours laboratory work. Prerequisite, Bacteriology 107. Time to be arranged. Professor MORREY.

PRIMARILY FOR GRADUATES

117-118. IMMUNITY AND SERUM THERAPY. Three to five credit hours. The year. Lectures, *M.*, *W.*, *F.*, at 11; laboratory, to be arranged. Prerequisite, 107 and 108, or equivalents. Associate Professor McCAMPBELL.

*Not given in 1910-1911.

Preparation of toxins, antitoxins, vaccines and immune serums.

*119-120. PATHOGENIC PROTOZOA. Three to five credit hours. The year. Time to be arranged. Two lectures, two to six hours' laboratory work. Prerequisites, Bacteriology 107 and 108, or equivalents. Associate Professor McCAMPBELL.

125-126. SPECIAL PROBLEMS IN BACTERIOLOGY. Three to five credit hours. The year. Time to be arranged. Conferences, library, and laboratory work. Prerequisite, one year's work in Bacteriology. Professor MORREY, Associate Professor McCAMPBELL.

BOTANY

(Office, Botanical Hall)

ASSOCIATE PROFESSOR SCHAFFNER, ASSISTANT PROFESSOR GRIGGS,
ASSISTANT PROFESSOR DACHNOWSKI, MISS DETMERS

Equivalent term courses: 101-102=21; 110=9; 116=11; 117-118=17; 120=20; 123-124=25; 125-126=24; 127-128=15; 129-130=27; 131-132=26; 133-134=32; 135-136=35; 137-138=36; 201-202=28; 203-204=29; 205-206=31.

101-102. GENERAL BOTANY. Four credit hours. The year. Text-books, Curtis' Nature and Development of Plants, Schaffner's Laboratory Outlines for General Botany (2d edition). Lecture, *W.*, 11; laboratory, *Tu., Th.*, 8 to 10; *Tu., Th.*, 10 to 12; *Tu., Th.*, 1 to 3. Associate Professor SCHAFFNER.

This course is a general survey of the plant kingdom by the method of types. It is intended to give a general view of the evolution of plants from the lowest to the highest.

110. DENDROLOGY. Two credit hours. Second semester. Text-book, Schaffner's Trees of Ohio and Surrounding Territory. Associate Professor SCHAFFNER.

A study of the local trees and shrubs. Students are required to prepare a dendrological herbarium.

116. PLANT PATHOLOGY. Three credit hours. Second semester. Text-book, Druggar's Fungous Disease of Plants. Lecture; laboratory. Assistant Professor GRIGGS.

117-118. FOREST BOTANY. Four credit hours. The year. Lectures *Tu., Th.*, at 9. Laboratory, *M., W.*, 1 to 4. Prerequisite, Botany 101-102, or equivalent. Assistant Professor DACHNOWSKI.

120. FIELD BOTANY. Two credit hours. Second semester. Time to be arranged. Prerequisite, Elementary Botany. Assistant Professor GRIGGS.

* Not given in 1910-1911.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

123-124. ADVANCED MORPHOLOGY. Three to five credit hours. The year. Laboratory, *W.*, 1 to 4. Other hours to be arranged. Prerequisite, Botany 101-102, or equivalent. Assistant Professor GRIGGS.

This course is intended to complete the morphological training begun in the first year. It includes instruction in microtechnique. Whenever possible this course should be accompanied by Botany 135-136.

125-126. PLANT PHYSIOLOGY. Four credit hours. The year. Lectures *Tu., Th., at 8*; laboratory *Tu., Th., 1 to 4*. Prerequisite, Botany 101-102, or equivalent. Assistant Professor DACHNOWSKI.

The course is an experimental study of the soil, air, and biotic relations of plants. It aims to give training and instruction in such phases of nutrition, growth, movement, and the tropisms of plants as have a practical bearing in agriculture, forestry, and general biology.

127-128. SPECIAL MYCOLOGY. Three credit hours. The year. Laboratory and field work. Prerequisite, Botany 101-102, or equivalent. Time to be arranged. Associate Professor SCHAFFNER.

129-130. SYSTEMATIC BOTANY. Three to five credit hours. The year. Time to be arranged. Prerequisite, Botany 101-102, or equivalent. Associate Professor SCHAFFNER.

131-132. CYTOLOGY AND MICROTECHNIQUE. Three to five credit hours. The year. Time to be arranged. Prerequisite, Botany 123-124, or equivalent. Associate Professor SCHAFFNER.

133-134. MINOR INVESTIGATIONS. Three credit hours. The year. Prerequisite, Botany 101-102, or equivalent. Time to be arranged. Associate Professor SCHAFFNER, Assistant Professor GRIGGS, Assistant Professor DACHNOWSKI.

135-136. EVOLUTION OF PLANTS. One credit hour. The year. Prerequisite, one-year course in botany. Lectures, *M., at 4*. Associate Professor SCHAFFNER.

137-138. SEMINARY. One credit hour. The year. Prerequisite, one-year course in botany. Time to be arranged.

This course should be elected only in connection with other advanced work.

EXCLUSIVELY FOR GRADUATES

201-202. RESEARCH IN SYSTEMATIC BOTANY. Three to ten hours. The year. Laboratory open daily. Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

203-204. RESEARCH IN MORPHOLOGY AND CYTOLOGY. Four to ten hours. The year. Laboratory open daily. Associate Professor SCHAFFNER, Assistant Professor GRIGGS.

205-206. RESEARCH IN PHYSIOLOGY AND ECOLOGY. Four to ten hours. The year. Laboratory open daily. Assistant Professor DACHNOWSKI.

CHEMISTRY

(Office, Chemistry Hall)

PROFESSOR MCPHERSON, EMERITUS PROFESSOR NORTON, PROFESSORS HENDERSON, FOULK, ASSOCIATE PROFESSORS EVANS, WITHROW, DR. WILKINSON, MR. KELLOGG, AND DEPARTMENT ASSISTANTS

FOR UNDERGRADUATES

Equivalent term courses: 105-106=7, 12; 109-110=44, 12; 113-114=21; 117=37; 119-120=20; 124=40; 136=77; 151-152=46; 153-154=47; 157-158=30; 161-162=50; 165=49; 168=48; 176=15; 179-180=32; 187-188=17; 191=35; 194=72; 201-202=41; 205-206=27; 209-210=73; 213=25; 215=28; 218=76; 220=74; 221=80; 224=81; 227=75; 231-232=26; 235-236=29.

105. ELEMENTARY CHEMISTRY. Four credit hours. First semester. Lectures, *M.*, at 8 or 3; quiz, *Tu.*, at 8 or 11, *Th.*, at 3, *F.*, at 8, 9, 10, 1 or 3; laboratory, *M.*, *F.*, 9 to 12, *Tu.*, *Th.*, 9 to 12, *M.*, *Tu.*, 1 to 4, *Th. F.*, 1 to 4, or *W.*, 1 to 4, *S.*, 8 to 11. Associate Professor EVANS, Miss MORGAN, Mr. STRATTON, Mr. HALL.

A general course on the chemistry of the non-metals, arranged for students who have not presented chemistry as an entrance requirement. Students taking this course will follow with course 106, second semester.

106. ELEMENTARY CHEMISTRY AND QUALITATIVE ANALYSIS. Four credit hours. Second semester. Time same as course 105. Prerequisites, Chemistry 105. Associate Professor EVANS, Mr. KELLOGG, Mr. STRATTON, Miss MORGAN.

A general course on the chemistry of the metals. The laboratory work accompanying is a general introductory course in qualitative analysis.

109. GENERAL CHEMISTRY. Four credit hours. First semester. One lecture, one quiz, six hours laboratory work weekly. Lecture *W.*, at 9; quiz, *Th.*, at 8 or 3, *F.*, at 8, 9, 10, 1 or 3; laboratory same as course 105. Associate Professors EVANS and WITHROW, Mr. KELLOGG, Mr. WITZEMANN.

A general course on the chemistry of the non-metals. It is more advanced than course 105 and is arranged for students who have had an acceptable course in elementary chemistry in a secondary school. Students taking this course will follow with course 110, second semester.

110. GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS. Four credit hours. Second semester. Prerequisite, Chemistry 109. Time same as course 109. Associate Professor EVANS, Mr. KELLOGG, Mr. STRATTON, Miss MORGAN.

A general course on the chemistry of the non-metals. It is more advanced than course 106. The laboratory work is a general course in qualitative analysis.

113-114. ADVANCED GENERAL CHEMISTRY. Two credit hours. The year. Two lectures weekly, *Tu., Th., at 11*. Prerequisite, Chemistry 106 or 110. Professor HENDERSON.

A course on fundamental topics in the field of advanced general chemistry.

117. QUALITATIVE ANALYSIS. Three credit hours. First semester. One lecture and six hours laboratory work weekly. Time to be arranged. Prerequisite, an acceptable course in general chemistry. Professor FOULK, Mr. SWEENEY.

This is an elementary course in qualitative analysis.

119-120. QUANTITATIVE ANALYSIS. Four credit hours. The year. One lecture, nine hours laboratory work weekly. Lecture, *M., at 1*. Laboratory open forenoons and afternoons. Prerequisite, course 106 or 110, or equivalent. Professor FOULK, Mr. SWEENEY.

First semester, elementary principles of gravimetric and volumetric analysis. Second semester, continuation of work of first semester with typical analytical methods, gravimetric and volumetric. This course must be accompanied by course 124, except by special permission of the instructor in charge. It is also desirable that it be accompanied by course 113-114.

124. CHEMICAL PROBLEMS. One credit hour. Second semester. *F., at 11*. Professor FOULK.

Extended practice in the solution of problems pertaining to gravimetric and volumetric analysis. This course is arranged to accompany course 119-120.

136. THE READING OF CHEMICAL LITERATURE. Two credit hours. Second semester. Prerequisite, one year of German. Professor FOULK.

The object of this course is to afford practice in the rapid reading of German chemical literature, the selections being made with special reference to the technical terms of the science.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

151-152. ORGANIC CHEMISTRY. Two credit hours. The year. Two lectures weekly, *Tu., Th., at 10.* Prerequisite, courses 113-114 and 119-120, except by special permission of the instructor. Professor McPHERSON.

This is a general course in organic chemistry.

153-154. ORGANIC CHEMISTRY. Two or three credit hours. The year. Six or nine hours laboratory work weekly. Laboratory open afternoons. This course must be accompanied or preceded by course 151-152. Professor McPHERSON, Mr. BOARD.

A general course in the preparation of typical organic compounds.

157-158. PHYSICAL CHEMISTRY. Three credit hours. The year. Three lectures weekly, *M., W., F., at 8.* Prerequisite, courses 113-114, 119-120, and 151-152, except by special permission of the instructor. Professor HENDERSON.

This is a general course in physical chemistry.

161. PHYSICAL CHEMISTRY. Two or three credit hours. First semester. Six to nine hours laboratory work weekly. Time to be arranged with instructor. Prerequisite, Chemistry 157-158. Professor HENDERSON.

162. PHYSICAL CHEMISTRY. Two or three credit hours. Second semester. Repetition of Chemistry 161. Professor HENDERSON.

165. QUANTITATIVE ANALYSIS. Advanced course. Three to five credit hours. First semester. One lecture, six to twelve hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 119-120, or equivalent. Professor FOULK.

This course is a continuation of course 119-120. It includes a systematic study of methods from one of the more exhaustive textbooks and also some practice in the preparation of pure material and the trial of an analytical method with it.

168. QUALITATIVE ANALYSIS. Advanced course. Second semester. Three to five credit hours. One lecture, six to twelve hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 119-120, or equivalent. Professor FOULK.

Extended work in general qualitative analysis including the more important of the rarer elements.

176. **SANITARY ANALYSIS.** Three credit hours. Second semester. Two lectures, three hours laboratory work weekly. Lectures, *M., F., at 10.* Laboratory open forenoons and afternoons. Prerequisite, Chemistry 119-120, or equivalent. Professor FOULK.

A study of the methods of sanitary water analysis and the interpretation of results.

179-180. **INDUSTRIAL CHEMISTRY.** Four credit hours. The year. First semester, two lectures, one conference, five hours laboratory work weekly. *Tu., Th., at 8, W., Th., 1 to 4.* Second semester, one lecture, one conference, eight hours laboratory work weekly. *Tu., at 8, W., Th., F., 1 to 4.* Prerequisite, Chemistry 119-120, 113-114, 153-154. Associate Professor WITHROW.

A general course on industrial chemistry.

187. **INORGANIC PREPARATIONS.** Two or three credit hours. First semester. Six to nine hours laboratory work weekly. Laboratory open afternoons. Prerequisite, Chemistry 113-114. Professor HENDERSON.

A course in the preparation of a limited number of compounds chosen so as to give practice in the different kinds of manipulation involved in the preparation of inorganic compounds.

188. **INORGANIC PREPARATIONS.** Two or three credit hours. Second semester. Repetition of course 187. Professor HENDERSON.

191. **RARE ELEMENTS.** Two credit hours. First semester. Two lectures weekly. *M., F., at 11.* Prerequisite, Chemistry, 119-120 and 113-114. Professor HENDERSON.

A general course on the chemistry of the rare elements, including a discussion of their increasing economic importance.

194. **APPLIED ELECTRO CHEMISTRY.** Two credit hours. Second semester. Two lectures weekly. Prerequisite, Chemistry, 157-158, cept by special permission of the instructor. Associate Professor WITHROW.

A descriptive course covering the application of the electric current in the chemical industries.

EXCLUSIVELY FOR GRADUATES

201-202. **PHYSICAL CHEMISTRY.** Three hours. The year, or may be elected either semester separately. Nine hours laboratory work weekly. Time to be arranged. Prerequisite, Chemistry 157-158. Professor HENDERSON.

A general course on physico-chemical measurements.

205-206. **ORGANIC CHEMISTRY.** Advanced course. Three to

five hours. The year. Library, conference, and laboratory work. Time arranged with instructor. Prerequisite, Chemistry 153-154. except by special permission of the instructor. Associate Professor Professor McPHERSON.

Special attention is given to the preparation of organic compounds with reference to yield and purity of products. Extended practice is also given in the quantitative determination of the elements present in organic compounds.

209-210. INORGANIC PREPARATION. Three hours. The year. Library, and laboratory work. Time to be arranged with instructor. Prerequisite, Chemistry 187-188. Professor HENDERSON.

This is an advanced course dealing largely with the preparation and study of a series of compounds of certain rare metals:

213. HISTORICAL CHEMISTRY. Two hours. First semester. Two lectures weekly, *Tu., Th., at 8*. Prerequisite, permission of the instructor in charge. Given in 1910-11 and biennially thereafter. Professor HENDERSON.

A general advanced course in historical chemistry.

215. ORGANIC CHEMISTRY. Two hours. First semester. Two lectures weekly. Prerequisite, permission of instructor in charge. Time to be arranged. Professor McPHERSON.

A general discussion of some important topic in organic chemistry. Topic for 1910-11, "A Discussion of the Subject of Stereo-Chemistry." Since the topic changes from year to year, the course may be elected in different years by the same student.

218. ORGANIC CHEMISTRY. Two hours. Second semester. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor in charge. Associate Professor EVANS.

This course is similar to course 215. Topic for 1910-11, "The Purin Derivatives and the Amino Acids." Since the topic changes from year to year, the course may be elected in different years by the same student.

220. INORGANIC CHEMISTRY. Two hours. Second semester. Two lectures weekly, *Tu., Th., at 8*. Prerequisite, Chemistry 157-158. Given in 1910-11 and biennially thereafter. Professor HENDERSON.

A general discussion of some important topic in the field of inorganic chemistry. Since the topic changes from year to year, the course may be elected in different years by the same student.

221. CHEMICAL THERMODYNAMICS. Two hours. First semester. Two lectures weekly, *Tu., Th., at 8*. Given in 1911-12 and bi-

ennially thereafter. Prerequisite, permission of the instructor in charge. Professor HENDERSON.

224. ELECTRO CHEMISTRY. Two hours. Second semester. Two lectures weekly, *Tu., Th., at 8*. Given in 1911-12 and biennially thereafter. Prerequisite, permission of the instructor in charge. Professor HENDERSON.

A discussion of the general principles underlying the subject of electro chemistry.

227. ANALYTICAL CHEMISTRY. Two hours. First semester. Two lectures weekly. Time to be arranged. Prerequisite, permission of the instructor in charge. Professor FOULK.

A course of lectures on some topic of general interest to students in analytical chemistry. Subject for 1910-11, "The Scientific Foundations of Analytical Chemistry." This course may be elected in different years by the same student.

231-232. CHEMICAL SEMINARY. One hour. The year. *W., at 11*.

All those engaged in giving instruction in the department, together with the fellows and graduate students, meet for an extended discussion of chemical problems of general interest.

235-236. RESEARCH WORK. Five to ten hours. The year. Library, conference, and laboratory work. Time arranged with instructor. Prerequisite, permission of the instructor in charge. Research work in organic chemistry is conducted under the supervision of Professor MCPHERSON and Associate Professor EVANS; in physical and general chemistry under Professor HENDERSON; in analytical chemistry under Professor FOULK; in industrial and electro chemistry under Associate Professor WITHROW.

ECONOMICS AND SOCIOLOGY

(Office, Room 211, University Hall)

PROFESSOR HAGERTY, PROFESSOR HAMMOND, ASSOCIATE PROFESSOR MCKENZIE, ASSISTANT PROFESSORS LOCKHART, GEPHART AND HUNTINGTON, MR. REEDER, AND MR. MILLS.

Equivalent term courses: 131-134=31, 32, 33; 135-136=33; 139-140=48; 141-142=42, 43; 143, 152=63; 145-146=45, 63; 153=34; 154=35, 36; 155=55; 156=56; 157-158=54; 159-160=61; 161=40; 163-164=37, 38, 51; 165-166=39, 52, 53; 167-168=44; 169-170=60; 171-172=58.

I ECONOMICS

UNDERGRADUATE COURSE

131. ECONOMIC AND SOCIAL HISTORY OF ENGLAND AND THE UNITED STATES. Three credit hours. First semester. *M., W., F.,*

at 8 or 9. Open only to first and second year students. Associate Professor McKENZIE.

132. Repetition of 131. Three credit hours. Second semester. *M., W., F., at 8.* Associate Professor McKENZIE.

133. ECONOMIC GEOGRAPHY. Three credit hours. First semester. *M., W., F., at 9.* Open only to first and second year students. Assistant Professor GEPHART.

134. Repetition of 133. Three credit hours. Second semester. *M., W., F., at 8 or 9.* Assistant Professor GEPHART.

135-136. PRINCIPLES OF ECONOMICS. Three credit hours. The year. *M., W., F., at 8, 9, or 1.* Not open to first year students. Should precede all courses in Economics except Economics 131, 132, 133, 134. Professor HAMMOND, Assistant Professors LOCKHART, GEPHART and HUNTINGTON.

139-140. ACCOUNTING. Two credit hours. The year. Prerequisite, registration in course 135-136. *Tu., Th., at 8.* Assistant Professor HUNTINGTON.

An introduction to practical accounting, including the analysis and interpretation of business statements.

141. PUBLIC FINANCE. Two credit hours. First semester. Prerequisite, Economics 135-136. *M., F., at 10.* Assistant Professor LOCKHART.

Public expenditures; sources of revenue, with special reference to problems of taxation; public credit; the budget; financial administration.

142. FINANCIAL HISTORY OF THE UNITED STATES. Two credit hours. Second semester. Prerequisite, Economics 135-136. *M., F., at 10.* Assistant Professor LOCKHART.

A study of the fiscal and monetary history of the country from colonial times to the present, with special reference to federal taxation, loans, and financial administration, currency legislation, and the development of banking institutions.

143. BUSINESS LAW. Three credit hours. First semester. Preceded or accompanied by courses 135-136. *M., W., F., at 8.* Assistant Professor HUNTINGTON.

A study of the leading legal principles of interest to the business man to be found in the law of contracts in general agency, partnerships, corporations, personal and real property, suretyship and guaranty, insurance, the estates of decedents, etc.

145-146. SENIOR SEMINARY IN ECONOMICS. Two credit hours. The year. A course of individual investigation and class discus-

sion of practical economic problems. Recommended to students who have had at least two years work in Economics. *Open to students who have obtained permission of the instructor. Tu., 3 to 5.* Professor HAMMOND.

UNDERGRADUATE AND GRADUATE COURSES

152. BUSINESS STATISTICS. Three credit hours. Second semester. Prerequisite, Economics 135-136. *M., W., F., at 8.* Assistant Professor HUNTINGTON.

The use of statistics in commercial and industrial enterprises, the work of various United States Government Bureaus engaged in collecting and presenting such statistics, as the Bureau of Corporations, the Bureau of the Census, the Bureau of Manufactures, etc.; and practice in compiling and preparing statistics from their reports and other sources.

153. MONEY AND CURRENCY. Three credit hours. First semester. Prerequisite, Economics 135-136. *M., W., F., at 2.* Assistant Professor LOCKHART.

The relation of money to prices; monetary systems; bimetallism, the gold standard, government and bank paper money; banking history and legislation, with special reference to note issues.

154. BANKING AND THE MONEY MARKET. Three credit hours. Second semester. Prerequisite, Economics 153. *M., W., F., at 2.* Assistant Professor LOCKHART.

The organization and functions of banks and other financial institutions; the mechanism of the money and investment markets; the rate of discount; investments.

*155. MUNICIPAL ECONOMICS AND FINANCE. Three credit hours. First semester. Prerequisite, Economics 135-136. *M., W., F., at 2.* Assistant Professor LOCKHART.

The growth of cities and its effects on their economic and social activities; private versus public ownership and operation of public utilities; city finances.

*156. TAXATION. Three credit hours. Second semester. *M., W., F., at 2.* Prerequisite, Economics 141. Assistant Professor LOCKHART.

An advanced course dealing chiefly with American tax systems and problems; the reform of the general property tax; corporation and business taxes; inheritance and income taxes, etc.

157. LIFE INSURANCE. Two credit hours. First semester. Prerequisite, Economics 135-136. *Tu., Th., at 10.* Assistant Professor GEPHART.

Principles of life insurance and its economic and social significance; kinds of companies, policies; methods of organization, operation, and regulation. Health, accident, industrial and old-age insurance.

158. PROPERTY INSURANCE. Two credit hours. Second semester. *Tu., Th., at 10.* Prerequisite, Economics 135-136. Assistant Professor GEPHART.

Fire, marine, liability, and miscellaneous insurance. Historical development and practice of various forms of property insurance. A careful study of each class of companies, their risks, policies, methods of operation and regulation by state.

159. COMMERCIAL DEVELOPMENT. Three credit hours. First semester. Prerequisite, Economics 135-136. *M., W., F., at 11.* Assistant Professor GEPHART.

A study of the basis and development of commerce in the chief commercial nations. Present and prospective leadership among commercial nations and the factors contributing to it. Regulation of commerce by the state.

160. COMMERCIAL POLICIES. Three credit hours. Second semester. Prerequisite, Economics 135-136. *M., W., F., at 11.* Assistant Professor GEPHART.

Theories of international trade, mercantilism, free-trade and protection; a study of the tariff of the United States with a comparative study of those of the leading commercial nations. Balance of trade, domestic and foreign exchange.

*161. MERCANTILE INSTITUTIONS IN DOMESTIC TRADE. Three credit hours. First semester. Prerequisite, Economics 135-136. *M., W., F., at 11.* Professor HAGERTY.

The evolution and organization of mercantile institutions with a study of the methods of selling and distributing goods, including advertising, selling, selling agencies, traveling salesmen, produce exchanges, etc.

*162. FOREIGN MARKETS AND THE CONSULAR SYSTEM. Three credit hours. Second semester. Prerequisite, Economics 135-136. *M., W., F., at 11.* Assistant Professor GEPHART.

The significance of exports and imports. The work of the state in furthering commerce. The contest for markets and the methods of securing them. An analysis of the commerce of the United States and the leading commercial nations.

*Not given in 1910-1911.

*163. CORPORATION ECONOMICS. Three credit hours. First semester. *M., W., F., at 9.* Prerequisite, Economics 135-136. Professor HAMMOND.

The development of corporations. Corporate organization, management, and finance. Forms and methods of industrial consolidations. Monopolistic tendencies in industry. Public regulation of industrial monopolies.

*164. INDUSTRIAL ORGANIZATION. Three credit hours. Second semester. Prerequisite, Economics 135-136. *M., W., F., at 9.* Professor HAMMOND.

The development and internal organization of modern manufacturing enterprises. The forces determining their location. Factory administration. Welfare work. Lectures, reports and visits of inspection to local plants.

165. LABOR LEGISLATION. Three credit hours. First semester. Prerequisite, Economics 135-136. *M., W., F., at 1.* Professor HAMMOND.

A study of the labor laws of the United States and the principal foreign countries with reference to their social and economic causes and effects.

166. ORGANIZATION AND REMUNERATION OF LABOR. Three credit hours. Second semester. Prerequisite, Economics 135-136. *M., W., F., at 1.* Professor HAMMOND.

History of the labor movement. Trade union policies and methods. Employers' organizations. Collective bargaining. Industrial arbitration. Attempts to modify the wage system. Time, piece, and progressive wages. Profit sharing, labor co-partnership and co-operation.

167. RAILWAY ECONOMICS. Three credit hours. First semester. Prerequisite, Economics 135-136. *M., W., F., at 9.* Professor HAMMOND.

The development of means of transportation. Railway growth and consolidation. Railway rate theories and practice. Railway commissions and public control. Government ownership of railroads.

168. RAILWAY ORGANIZATION AND ADMINISTRATION. Three credit hours. Second semester. Prerequisite, Economics 135-136. *M., W., F., at 9.* Professor HAMMOND.

The organization of a modern railway system and the func-

tions of the various departments. Rate making and the work of the traffic department. The work of the industrial commissioner. Railway finance and statistics. The relation of the railroads to the accounting division of the Interstate Commerce Commission.

169-170. ECONOMIC BIBLIOGRAPHY. One credit hour. The year. Prerequisite, Economics 135-136. *W.*, at 4. Mr. REEDER.

Use of catalogues, magazine indexes, society publications, state and municipal documents with special reference to economic subjects. Lectures and reference problems.

171. ADVANCED ACCOUNTING. Three credit hours. First semester. Prerequisite, Economics 137-138. *Tu., Th.*, at 9, and another hour to be arranged. Assistant Professor HUNTINGTON.

The principles of modern accounting, including a study of some of its problems, especially those connected with the balance sheet and the income statement, as the valuation of assets and the treatment of good will, depreciation, capital stock, profits, surplus, reserves, etc.

172. COST ACCOUNTING. Three credit hours. Second semester. Prerequisite, Economics 171. Time to be arranged. Assistant Professor HUNTINGTON.

The purpose of cost accounting, the relation of the various elements of cost, and the methods of recording them in various types of industries.

*174. AUDITING. Three credit hours. Second semester. Prerequisite, Economics 171. *Tu., Th.*, at 8, and another hour to be arranged. Assistant Professor HUNTINGTON.

The duties and responsibilities of an auditor or certified public accountant, the various kinds of audits and their value, the nature and value of the auditor's report. The preparation of audit reports and the working out of difficult accounting problems.

II. SOCIOLOGY

Equivalent term courses: 101-102=1; 103=8; 104=10; 105=9; 107=2; 109-110=4, 5, 6; 113-114=11; 117-118=7.

101-102. PRINCIPLES OF SOCIOLOGY. Three credit hours. The year. *M., W., F.*, at 8, 9, or 3. Professor HAGERTY and Associate Professor MCKENZIE.

A study of the fundamental principles of sociology. Text-book, lectures, collateral reading, and individual investigations.

*103. THE INDIAN. Three credit hours. First semester. Pre-

* Not given in 1910-1911.

requisite, Sociology 101-102. *M., W., F., at 2.* Associate Professor McKENZIE.

A study of primitive man. Readings from reports of the United States Bureau of Ethnology and other sources. A study of the modern Indian problem.

104. THE IMMIGRANT. Three credit hours. Second semester. Prerequisite, Sociology 101-102. *M., W., F., at 1.* Associate Professor McKENZIE.

The causes and sources of migration, provisions for transportation, immigration laws, and the assimilation of nationalities.

105. THE NEGRO. Three credit hours. First semester. Prerequisite, Sociology 101-102. *M., W., F., at 1.* Associate Professor McKENZIE.

A study of tropical man and the results of his transference to a temperate clime. Negro health, crime, education, and progress in the United States.

*107. THE FAMILY. Three credit hours. First semester. Prerequisite, Sociology 101-102. *M., W., F.*

A study of the matrimonial institutions of primitive society and the evolution of the family through the Greek, Roman, Medieval and Modern Periods.

108. PRIMITIVE MAN IN OHIO. One credit hour. Second semester. Time to be arranged. Prerequisite, Sociology 101 and 102. Mr. W. C. MILLS.

A study of the geological evidence of man's antiquity in Ohio. A detailed study of mounds, earthworks, and remains; environment and stages of culture; late discoveries in the mounds and village sites in Ohio. Illustrated by specimens from the Archaeological Museum.

109. MODERN CHARITY. Three credit hours. First semester. *M., W., F., at 9.* Prerequisite, Sociology 101-102. Professor HAGERTY.

The treatment of dependent and defective classes. A history of poor relief in Great Britain and the United States. Outdoor and indoor relief, both public and private. Organized charity, the treatment of the vagrant, the care of dependent children, the insane, the feeble minded, the epileptic, and the education of the blind and the deaf.

110. CRIMINOLOGY. Three credit hours. Second semester. *M.,*

* Not given in 1910-1911.

W., F., at 9. Prerequisite, Sociology 101-102. Professor HAGERTY.

A study of crime and the social and physiological causes of crime. An historical study of prison systems and methods. The indeterminate sentence, the probation, and the parole laws. The Juvenile Court and its agencies to prevent crime.

*111. POVERTY. Three credit hours. First semester. Prerequisite, Sociology 101-102. *M., W., F., at 9.* Professor HAGERTY.

A study of the personal and social causes of poverty and dependency. Exploitation, maladjustment, housing conditions, tenement legislation, etc. The maintenance of a reputable standard of living.

*112. PREVENTATIVE PHILANTHROPY. Three credit hours. Second semester. Prerequisite, Sociology 109 or 111. Professor HAGERTY.

A study of preventative institutions, and methods for the promotion of thrift, and for sanitation and public health; parks, playgrounds, substitutes for the saloon, social settlements, child labor legislation, industrial education, building codes, etc.

*113. HISTORIC SOCIALISM AND SOCIAL REFORM. Three credit hours. First semester. Prerequisite, Sociology 101-102, or Economics 135-136. *M., W., F., at 1.* Associate Professor MCKENZIE.

History and theory of communism, socialism and reform to the middle of the nineteenth century.

*114. RECENT SOCIALISM AND SOCIAL REFORM. Three credit hours. Second semester. Prerequisite, Sociology 101-102, or Economics 135-136. *M., W., F., at 1.* Associate Professor MCKENZIE.

Marx and his contemporaries. Present movements in the United States and abroad. The social function of the church.

115-116. FIELD WORK IN SOCIOLOGY. Two credit hours. One or two semesters. Time to be arranged. Open only to graduates and seniors who have had two years work in Sociology. Professor HAGERTY.

A study of the work of charity-organization, the Juvenile Court or the Social Settlement, through practical experience in these organizations. This course involves the preparation of papers.

117-118. SEMINARY IN SOCIOLOGY. Two credit hours. The year. *Tu., 3 to 5.* Open to graduates and advanced undergraduates. Professor HAGERTY.

* Not given in 1910-1911.

EXCLUSIVELY FOR GRADUATES

Equivalent term courses: 201-202=14; 203-204=50; 205-206=62; 207-208=47.

201-202. ADVANCED SOCIOLOGY. Two hours. The year. Prerequisite, Sociology 101-102. *M., W., at 2.* Assistant Professor MCKENZIE.

A rapid review of social theories from Plato to Spencer, with a more detailed study of the writings of recent sociologists.

203-204. DISTRIBUTION OF WEALTH. Three hours. The year. *M., W., F., at 11.* Professor HAGERTY.

A study of the development of economic theories concerning the distribution of the social product among the producers from the time of the mercantilists to the present time. The works of the leading writers of each period are read and discussed in class.

*205-206. THE STATE IN ITS RELATION TO INDUSTRY AND LABOR. Two hours. The year. *M., 3 to 5.* Professor HAMMOND.

A study of the trend of economic and legal thought concerning the part which the state should take in regulating and developing industry and labor. The results of the policy of non-interference and of the later tendency towards regulation in various countries, particularly those of Anglo-Saxon peoples.

207-208. GRADUATE SEMINARY IN ECONOMICS AND SOCIOLOGY. Two hours. The year. Time to be arranged.

Graduate students and the instructors in the department will meet regularly for the presentation of the results of investigation, the review of current economic and sociological literature, and the discussion of current problems.

ENGLISH

(Office, Room 116, University Hall)

PROFESSORS DENNEY, TAYLOR, MCKNIGHT, ASSOCIATE PROFESSOR GRAVES,
ASSISTANT PROFESSORS DUNCAN, BLANCHARD, LEIGHTON,
COOPER, BURNHAM

Equivalent term courses: 101-104=1, 2, 3; 107=3a; 108=3b; 111-112=4; 123=4a; 124=4b; 131= $\frac{1}{2}$ of 8; 133= $\frac{1}{2}$ of 45; 135=11; 136=12; 137=14; 138=15; 140=18; 141=19; 142=20; 151=28; 153=31; 161=33; 162=37.

FOR UNDERGRADUATES

101. PARAGRAPH WRITING: DESCRIPTION AND NARRATION. Two credit hours. First semester. *Tu., Th., at 8, 9, 10, 11, 1, 2, or 3;*

* Not given in 1910-1911.

M., F., at 10, 11, or 2; W., F., at 8 or 3. (Course 101 will be repeated in the second semester as course 102 for the benefit of those who fail, the class meeting Saturdays at 9 a. m., Room 119.) Text: Scott and Denney's Paragraph-Writing. All instructors.

102. Repetition of course 101.

104. PARAGRAPH WRITING: EXPOSITION AND ARGUMENTATION. Two credit hours. Second semester. Prerequisite, English 101. Same hours as for course 101. (Course 104 is also offered in the summer session.) All instructors.

107. ADVANCED DESCRIPTION AND NARRATION. Two credit hours. First semester. *Tu., Th., at 11.* Prerequisite, English 101. Associate Professor GRAVES.

108. ADVANCED EXPOSITION AND CRITICISM. Two credit hours. Second semester. *Tu., Th., at 11.* Prerequisite, English 101. Associate Professor GRAVES.

111-112. ADVANCED ARGUMENTATIVE WRITING. Two credit hours. The year. *Tu., Th., at 10.* Prerequisite, English 104. Assistant Professor DUNCAN.

121. PRINCIPLES OF PUBLIC SPEAKING. Two credit hours. First semester. *W., F., at 1 or 3.* Prerequisite, English 101 and 104. Assistant Professor BLANCHARD.

122. DEBATING. Two credit hours. Second semester. *W., F., 1 or 3.* Prerequisite, English 101 and 104. Assistant Professor BLANCHARD.

123. ADVANCED DEBATING. Two credit hours. First semester. *W., F., at 2.* Prerequisite, English 122. Assistant Professor BLANCHARD.

124. EXTEMPORE SPEAKING. Two credit hours. Second semester. *W., F., at 2.* Prerequisite, English 122. Assistant Professor BLANCHARD.

127. HISTORY OF THE ENGLISH LANGUAGE. Two credit hours. First semester. *Tu., Th., at 1.* No prerequisite course. Designed for students without a knowledge of Old and Middle English. The development of the language is traced by means of illustrative specimens. Attention is paid to the history of spelling and pronunciation, the changes in the meaning of words, and the origin of modern idioms. Professor McKNIGHT.

128. ENGLISH WORDS. Two credit hours. Second semester. *Tu., Th., at 1.* No prerequisite course. Text-book: Gardiner and

Kittridge: Words and Their Ways in English Speech. Professor McKNIGHT.

129. THE ENGLISH BIBLE: NARRATIVE FORMS. Two credit hours. First semester. *Tu., Th., at 3.* No prerequisite course. Assistant Professor DUNCAN.

130. THE ENGLISH BIBLE: POETIC FORMS. Two credit hours. Second semester. *Tu., Th., at 3.* No prerequisite course. Assistant Professor DUNCAN.

131. SURVEY OF ENGLISH LITERATURE. Three credit hours. First semester. *M., W., F., at 9, 11, 1 or 3.* No prerequisite course. Associate Professor GRAVES, Assistant Professors DUNCAN, LEIGHTON, BURNHAM.

The outline of the history of English Literature will be given by lecture. The following will be read: Shakespeare's Henry V, As You Like It, Coriolanus; Milton's Paradise Lost, Books I, II; Bunyan's Pilgrim's Progress, Pt. I; Dryden's Odes and Translations from Chaucer; Addison's Essays; Pope's Rape of the Lock; Goldsmith's Essays and Plays; Scott's Quentin Durward; Byron's Mazeppa; Tennyson's Princess; Carlyle's Essay on Biography.

132. Repetition of 131. *M., W., F., at 11.* Associate Professor GRAVES.

133. SURVEY OF AMERICAN LITERATURE. Three credit hours. First semester. *M., W., F., at 8.* No prerequisite course. Professor TAYLOR.

The outline of the history will be given by lecture. The reading and criticism will be of Irving, Cooper, Bryant, and Poe; of Hawthorne, Emerson, Whittier, Longfellow, and Lowell; and of Walt Whitman, with a brief survey of recent literature.

134. Repetition of 133. *M., W., F., at 8, 9, or 3.* Professor TAYLOR, Assistant Professors DUNCAN, LEIGHTON, BURNHAM.

135. POETRY FROM 1557 TO 1765. Three credit hours. First semester. *M., W., F., at 3.* Prerequisite, course 131 or 132. Latin 111-112 is recommended. Assistant Professor COOPER.

The development of poetry (exclusive of the drama, and of Milton and Spenser) from Wyatt and Surrey to the Romantic movement. Special emphasis will be laid on the work of Sonneteers, the Cavalier lyrists, the Metaphysical, and the Classical poets.

136. ESSAYS AND LETTERS (BACON TO BURKE). Three credit hours. Second semester. *M., W., F., at 3.* Prerequisite, English 131 or 132. Assistant Professor COOPER.

The detailed study of the essays of Bacon, Fuller, Walton, Browne, Dryden, Swift, Addison, Steele, Samuel Johnson, and Goldsmith, together with a review of the work of the principal letter writers such as James Howell, Lady Wortley Montague, Horace Walpole, Gray, and Cowper.

137. **ESSAYISTS (BURKE TO DEQUINCEY).** Two credit hours. First semester. *Tu., Th., at 9.* Prerequisite, English 131 or 132. Professor DENNEY.

Reading in Burke, Coleridge, Lamb, Landor, Hazlitt, and De-Quincey.

138. **ESSAYISTS (CARLYLE TO THE PRESENT).** Two credit hours. Second semester. *Tu., Th., at 9.* Prerequisite, English 131 or 132. Professor DENNEY.

Reading in Carlyle, Ruskin, Arnold, Newman, Pater, and Stevenson.

139. **THE ROMANTIC MOVEMENT.** Three credit hours. First semester. *M., W., F., at 8.* Prerequisite, English 131 or 132. Assistant Professor DUNCAN.

A study of the rise and progress of the new poetic movement during the last years of the eighteenth and the earlier years of the nineteenth century. The poetry of Thomson, Cowper, Gray, Blake, Collins, and Burns.

140. **WORDSWORTH AND HIS PERIOD.** Three credit hours. Second semester. *M., W., F., at 8.* Prerequisite, English 131 or 132. Assistant Professor DUNCAN.

The poetry of Wordsworth, Byron, Shelley, and Keats.

141. **TENNYSON.** Three credit hours. First semester. *M., W., F., at 11.* Prerequisite, English 131 or 132. Professor TAYLOR.

The whole of Tennyson will be read and criticized and rapid consideration given to Fitzgerald, Arnold, Swineburne, Rossetti, and Morris.

142. **BROWNING.** Three credit hours. Second semester. *M., W., F., at 11.* Prerequisite English 131 or 132. Professor TAYLOR.

The whole of Browning will be read and criticized, with some consideration of the poetry of George Meredith, and of their influence on recent literature.

151. **OLD ENGLISH.** Three credit hours. First semester. *M., W., F., at 1.* Professor McKNIGHT.

Old English prose and poetry as found in Bright's Anglo-Saxon Reader.

152. OLD AND MIDDLE ENGLISH. Three credit hours. Second semester. *M., W., F., at 1.* Professor McKNIGHT.

Bewoulf, followed by selections illustrating the language and literature from the Norman Conquest to the time of Chaucer.

153. CHAUCER. Two credit hours. First semester. *Tu., Th., at 2.* Professor McKNIGHT.

Chaucer's principal works are read. Brief consideration is given to Chaucer's contemporaries, Gower, Wycliffe, Langland, and the author of *Sir Gawayne and The Grene Knight*.

Course 153 alternates with course 161. Offered for 1910-1911. Not offered for 1911-1912.

154. ENGLISH FICTION: TO RICHARDSON. Two credit hours. Second Semester. *Tu., Th., at 2.* Professor McKNIGHT.

A rapid survey, by means of modern versions, of early epic poetry and medieval romance, followed by a study of the types of novel in the sixteenth and seventeenth centuries.

Course 154 alternates with course 162. Offered for 1910-1911. Not offered for 1911-1912.

155. THE NOVEL: RICHARDSON TO SCOTT. Three credit hours. First semester. *M., W., F., at 9.* Professor TAYLOR.

The history of the development of the novel in the period is given by lecture. Reading and criticism of Richardson, Fielding, Sterne, Jane Austen, and Scott.

156. THE NOVEL: DICKENS TO MEREDITH. Three credit hours. Second semester. *M., W., F., at 9.* Professor TAYLOR.

The history and development of the novel in this period is given by lecture. Reading and criticism of Dickens, Thackeray, George Eliot, and George Meredith.

157. VERSIFICATION. Three credit hours. First semester. *M., W., F., at 9.* Associate Professor GRAVES.

The theory of verse structure with a history of the principal English rhythms, and practice in verse composition.

158. THE SHORT STORY. Three credit hours. Second semester. *M., W., F., at 9.* Associate Professor GRAVES.

Lectures on structure and form in the short story, with class reports on assigned readings, and practice in story writing.

161. SPENSER AND HIS PERIOD. Two credit hours. First semester. *Tu., Th., at 2.* Professor McKNIGHT.

A study of the principal works of Spenser, Raleigh, Sidney, Harvey, and others. Special attention is given to the prevailing literary fashions of this period.

Course 161 alternates with course 153. Not offered for 1910-11. Offered for 1911-1912.

162. MILTON: EPIC AND PROSE. Two credit hours. Second semester. *Tu., Th., at 2.* Professor McKNIGHT.

Course 162 alternates with course 154. Not offered for 1910-1911. Offered for 1911-1912.

165. MYSTERIES, MORALITIES AND INTERLUDES. Two credit hours. First semester. *Tu., Th., at 3.* Professor McKNIGHT.

Manly's Specimens of Pre-Shakespearean Drama is made the basis of this course. Outside study in the complete collections is also prescribed.

166. THE DRAMA FROM 1580 TO 1642 (EXCLUSIVE OF SHAKESPEARE). Two credit hours. Second semester. *Tu., Th., at 3.* Professor McKNIGHT.

One or two plays of each of the principal contemporaries and immediate successors of Shakespeare; lectures on the history of the drama in this period.

167. SHAKESPEARE: HISTORIES AND TRAGEDIES. Three credit hours. First semester. *M., W., F., at 11.* Professor DENNEY.

All of the plays are read with a view to complete criticism.

168. SHAKESPEARE: COMEDIES AND ROMANCES. Three credit hours. Second semester. *M., W., F., at 11.* Professor DENNEY.

All of the plays are read with a view to complete criticism.

169. MODERN ENGLISH DRAMA, 1660-1802. Two credit hours. First semester. *Tu., Th., at 11.* Professor DENNEY.

Representative plays of the principal writers are read; lectures on the history of the drama in this period.

170. MODERN ENGLISH DRAMA, NINETEENTH CENTURY. Two credit hours. Second semester. *Tu., Th., at 11.* Professor DENNEY.

The reading of representative plays is accompanied by lectures on the history of the drama in the nineteenth century. Some attention is paid to American plays.

EXCLUSIVELY FOR GRADUATES

201. THE BEGINNING OF THE SHORT STORY. Two hours. First semester. *W., at 4.* Associate Professor GRAVES.

An investigation of types of the short story in English, from the Middle Ages to the present.

202. THE LYRIC. Two hours. Second semester. *W., at 4.* Associate Professor GRAVES.

A study of the characteristic of lyrical poetry with a history of the lyric in English literature.

203. PIERS PLOWMAN. Two hours. First semester. *M.*, at 4. Professor McKNIGHT.

A study of the form and content of the three versions of the Vision Concerning Piers Plowman, and of the pictures of contemporary life afforded. Attention is paid to the recent discussion concerning authorship.

204. THE AUTHOR OF SIR GAWAYNE AND THE GRENE KNIGHT. Two hours. Second semester. *M.*, at 4. Professor McKNIGHT.

An attempt to become acquainted with the personality of this anonymous writer and to arrive at a conclusion concerning his much debated purpose in his poem, *The Pearl*.

205. HISTORY OF CRITICAL THEORY. Two hours. First semester. *Tu.*, at 4. Professor DENNEY.

Saintsbury's *Loci Critici* is used as the basis of individual investigations.

206. PROBLEMS IN THE DRAMA. Two hours. Second semester. *Tu.*, at 4. Professor DENNEY.

Lectures on the history of dramatic theory. Each student is assigned a specific problem for individual research and weekly report.

207. MEREDITH, HARDY, JAMES. Two hours. First semester. *F.*, at 4. Professor TAYLOR.

208. POETRY AND THE DRAMA SINCE 1880. Two hours. Second semester. *F.*, at 4. Professor TAYLOR.

Courses 153, 156, 165, 168, and 205 are also offered in the Summer Session of 1910.

ENTOMOLOGY

(See Zoology and Entomology)

EUROPEAN HISTORY

(Office, Room 204, University Hall)

PROFESSOR SIEBERT, ASSOCIATE PROFESSOR MCNEAL, ASSISTANT PROFESSOR PERKINS

Equivalent term courses: 101-102=1, 2, 3; 113-114=4; 105=5; 106=6; 110=7; 111=8; 112=9; 116=11; 115=10; 103-104=14; 117=15; 118=16; 107=17; 108=18; 109=19; 119-120=20; 203-204=21; 201-202=22.

101. MEDIEVAL HISTORY. Three credit hours. First semester. *M.*, *W.*, *F.*, at 9, 11, 1 or 2. Professor SIEBERT, Assistant Professor PERKINS.

102. MODERN HISTORY FROM 1500 A. D. Three credit hours. Second semester. *M., W., F., at 9, 11, 1, or 2.* Professor SIEBERT, Assistant Professor PERKINS.

103-104. HISTORY OF ENGLAND. Three credit hours. The year. *M., W., F., at 8.* Introductory course. Assistant Professor PERKINS.

*105. HISTORY OF GREECE. Three credit hours. First semester.

*106. HISTORY OF ROME. Three credit hours. Second semester.

*107. THE DARK AGES, 400 A. D. to 814 A. D. Three credit hours. First semester. *Tu., Th., at 9.* Prerequisite, courses 101, 102.

*108. THE FEUDAL AGE, 814 to 1250 A. D. Three credit hours. Second semester. *M., W., F., at 3.* Prerequisite, courses 101, 102.

109. THE AGE OF THE RENAISSANCE, 1250 to 1500 A. D. Three credit hours. Second semester. *M., W., F., at 2.* Prerequisite, courses 101, 102. Professor SIEBERT.

110. THE PERIOD OF THE REFORMATION. Three credit hours. Second semester. *M., W., F., at 2.* Prerequisite, courses 101, 102. Professor SIEBERT.

111. THE FRENCH REVOLUTIONARY AND NAPOLEONIC PERIODS, 1789-1815. Three credit hours. First semester. *M., W., F., at 9.* Prerequisite, courses 101, 102. Assistant Professor PERKINS.

112. EUROPE IN THE NINETEENTH CENTURY. Three credit hours. Second semester. *M., W., F., at 9.* Prerequisite, courses 101, 102. Assistant Professor PERKINS.

Especial emphasis on the past fifty years and the interpretation of recent events in Europe.

113-114. CONSTITUTIONAL HISTORY OF ENGLAND. Three credit hours. The year. *Tu., Th., F., at 10.* Prerequisite, course 103-104, or courses 101 and 102. Professor SIEBERT.

*115. EUROPE AND AFRICA, INDIA AND AUSTRALIA. Two credit hours. First semester. *Tu., Th., at 9.* Prerequisite, courses 101, 102. Professor SIEBERT.

*116. EUROPE AND TURKEY: THE EASTERN QUESTION. Two credit hours. Second semester. *Tu., Th., at 9.* Prerequisite, courses 101, 102. Professor SIEBERT.

117. NORTHEASTERN EUROPE. Two credit hours. First semester. *Tu., Th., at 9.* Prerequisite, courses 101, 102. Professor SIEBERT.

* Not given in 1910-1911.

118. EUROPE AND ASIA: THE FAR EASTERN QUESTION. Two credit hours. Second semester. *Tu., Th., at 9.* Prerequisite, courses 101, 102. Professor SIEBERT.

119-120. HISTORY OF GERMANY. Two credit hours. The year. *Tu., Th., at 11.* Assistant Professor PERKINS.

The emphasis will be laid on the modern period beginning with the Renaissance and the Protestant Revolt.

EXCLUSIVELY FOR GRADUATES

203-204. SEMINARY IN MODERN EUROPEAN HISTORY. Two hours. The year. Open only by permission of instructor. Time to be arranged. Professor SIEBERT.

*201-202. SEMINARY IN MEDIEVAL HISTORY. Reading of the sources of some period in the Middle Age. Two hours. The year. Open only by permission of instructor. Time to be arranged. Associate Professor McNEAL.

FRENCH

(See Romance Languages)

GEOLOGY

(Office, Room 1, Orton Hall)

PROFESSOR PROSSER, PROFESSOR BOWNOCKER, ASSISTANT PROFESSOR HUBBARD, MR. MORSE

Equivalent term courses: 101-102 = 17; 103-104 = 11, 12; 105 = 13; 106 = 18; 107-108 = 14; 166 = 7; 167 = 6; 109-110 = 19; 111-112 = 21; 113-114 = 15; 141-142 = 23; 201-202 = 16; 203-204 = 20.

FOR UNDERGRADUATES

101-102. PHYSIOGRAPHY. Three credit hours. The year. *M., W., F., at 8 or 1; M., Tu., Th., at 10.* Open to freshmen and sophomores only.

Three field trips are made Saturdays in each semester, each trip taking the place of a recitation. From October 31 until the end of the semester, the Monday recitation is replaced by laboratory work, time to be arranged. Professor BOWNOCKER, Assistant Professor HUBBARD, Mr. MORSE.

Physiographic features of the earth's surface; the ocean, and the atmosphere. Recitations, lectures, and assigned readings, illustrated with models and lantern views.

103. INORGANIC GEOLOGY. Three credit hours. First semester. *M., W., F., at 9.* Professor BOWNOCKER.

* Not given in 1910-1911.

Introductory course. Petrographical, structural, and dynamical geology. Study of common minerals and rocks, and geological maps. Occasional field trips on Saturday morning. The course is illustrated with lantern views, models and museum materials.

104. HISTORICAL GEOLOGY. Three credit hours. Second semester. Lectures, *M., W., F., at 9.* Prerequisite, Geology 103. Professor PROSSER.

A general course in paleontological and stratigraphical geology, illustrated by lantern views, maps, and specimens. The development of organisms and the classification and distribution of the geological formations, especially those of Ohio, are considered. After the first of April some of the Friday lectures will be replaced by field trips on Saturdays.

[Courses 103 and 104 are considered as forming a general course in geology which is required before advanced work in physiography, historical or inorganic geology.]

FOR ADVANCED UNDERGRADUATES AND GRADUATES

105. FIELD GEOLOGY. Three to five credit hours. First semester. Time to be arranged. Lectures, assigned reading, field trips and laboratory work. Field trips generally on Saturdays while weather permits, laboratory work for the remainder of the semester. Prerequisite, Geology 103-104. Professor PROSSER and Mr. MORSE.

Study of the geological formations readily accessible from Columbus, and identification of fossils characteristic of different formations. This course is intended to acquaint the student with the ordinary methods of field investigation, and involves the collection and identification of specimens, the measurement of geological sections and the preparation of a report describing the region studied. Occasionally longer geological excursions will be arranged. The one proposed for 1910 will be to Niagara Falls and Buffalo, where the formations from the Medina of the Ordovician at Lewiston up to the Portage of the Devonian on the shore of Lake Erie will be studied.

106. GLACIAL GEOLOGY. Three credit hours. Second semester. Time to be arranged. Prerequisite, Geology 103-104. Professor BOWNOCKER.

A study of the glacial geology of North America. The first half of the semester will be given to lectures, assigned readings, and map work. The second half, largely to field work and the preparation of reports.

107-108. PALEONTOLOGY. Two to five credit hours. The year. Laboratory open afternoons, 1 to 4, and on certain days in the morning. Prerequisite, Geology 103-104. Professor PROSSER and Mr. MORSE.

Careful training in systematic classification which may be used in the philosophical study of the development of plant and animal life, or as a means of becoming acquainted with the fauna and flora that characterize the various geological formations. At first the student devotes some time to conchology, studying recent shells in which the characters used in classification are well preserved, and after this preliminary work, fossils are studied. Fossils afford the most reliable data for identifying and correlating geological formations, and the critical study of faunas is a field especially adapted to independent research. Laboratory, museum, and field work.

166. PETROGRAPHY. Two credit hours. Second semester. *M.*, at 9, *T.*, 9 to 11. Prerequisite, Geology 103, and Chemistry. Professor BOWNOCKER and Mr. MORSE.

A study of hand specimens of igneous, metamorphic and sedimentary rocks. More than one-half of the time will be devoted to laboratory work.

167. ECONOMIC GEOLOGY. Three credit hours. First semester. *M.*, *W.*, *F.*, at 11. Prerequisite, Geology 103-104. Professor BOWNOCKER.

The nature of ores, their classification and origin. The metallic ores of the United States, their distribution, abundance, modes of occurrence, and origin. The non-metals, coal, oil, gas, clay, lime, cement, building stones, etc. In the discussion of the non-metals, emphasis will be laid on the products of Ohio.

109-110. MICROSCOPICAL PETROGRAPHY. Two to five credit hours. The year. Time to be arranged. Prerequisite, Chemistry, Mineralogy, and Geology 103-104. Professor BOWNOCKER.

Optical crystallography, with practical determination of rock-forming minerals, macroscopically and microscopically. Study of the igneous rocks in the hand specimen and thin section. The preparation of thin sections.

111-112. ADVANCED PHYSIOGRAPHY. Three to five credit hours. The year. Time to be arranged. Prerequisite, Geology 101-102, and 103-14, or 103-104 concurrently. Assistant Professor HUBBARD.

Conferences and reports, reviews of literature, directed and independent excursions and laboratory work.

113-114. AREAL GEOLOGY. Two to five credit hours. The year. Field work fall and spring, laboratory work in winter. Laboratory

open afternoons, 1 to 4. Prerequisite, Geology 103-104; 105-106, and 107-108 for Paleozoic group, and 101-102, 103-104, and 105-106 for Cenozoic group. Professor PROSSER and Assistant Professor HUBBARD.

Instruction in the methods of preparing geological maps and reports for both the Paleozoic and Cenozoic groups. Outcrops are traced in the field and a colored geological map is prepared, together with sections showing the geological structure.

115. ECONOMIC RESOURCES OF THE UNITED STATES. One credit hour. First semester. *Th., at 11.* Must be taken in conjunction with Geology 167. Prerequisite, Geology 101-102 or 103-104, and Economics 135-136. Professor BOWNOCKER.

141-142. MINOR INVESTIGATIONS AND CURRENT LITERATURE. Two to five credit hours. The year. Time to be arranged. A study of special topics and current literature in geology. Assigned readings, conferences, and reports. (a) HISTORICAL GEOLOGY. Prerequisite, Geology 103-104 required. Geology 101-102 is recommended. Professor PROSSER. (b) INORGANIC GEOLOGY. Prerequisite, Geology 167. Professor BOWNOCKER. (3) PHYSIOGRAPHY. Prerequisite, Geology 101-102, 103, and 104. Assistant Professor HUBBARD.

EXCLUSIVELY FOR GRADUATES

201-202. ADVANCED HISTORICAL GEOLOGY. Three to five hours. The year. Time to be arranged. Laboratory open afternoons, 1 to 4. Prerequisite, Geology 103-104, and 107-108. Professor PROSSER.

Advanced work in paleontology and stratigraphical geology. Field work to be arranged with individual students and it is recommended that a part of it be done during the summer vacation under the direction of the instructor in charge.

203-204. RESEARCH WORK. Three to five hours. The year. Prerequisite, preceding courses in inorganic or historical geology. Field, laboratory, and library study is offered along three lines. Outline of work and time will be arranged with individual students. (a) STRATIGRAPHY AND PALEONTOLOGY. The investigations of some field problem in stratigraphy with laboratory and library study or of some special subject in paleontology. Professor PROSSER. (b) ECONOMIC GEOLOGY. The investigation of some field problem in petroleum, natural gas, coal, or salt. Professor BOWNOCKER. (c) PHYSIOGRAPHY. Field problems, experimental studies in the laboratory or investigations in the literature. Assistant Professor HUBBARD.

GERMANIC LANGUAGES AND LITERATURES

(Office, Room 317, University Hall)

PROFESSOR RHOADES, ASSOCIATE PROFESSOR EISENLOHR, ASSISTANT PROFESSORS THOMAS, BUSSE AND BARROWS, MR. BUSEY, MISS BARROWS

Equivalent term courses: 101-102=1; 103-104=4; 106=2; 108= $\frac{1}{2}$ of 10; 111-112=10a; 121-122=13; 125=11; 126=30; 127=39; 128=28; 137-138=26; 139=14; 140=15; 142=34; 147=16; 205-206=40; 207-208=18.

FOR UNDERGRADUATES

101-102. ELEMENTARY GERMAN. Four credit hours. The year. *M., Tu., Th., F., at 9, 10, 11, or 2; Tu., W., Th., F., at 3.* Sections 1-3 open only to students offering four entrance units in Latin; sections 4-7 for other students.

103. INTERMEDIATE GERMAN. Four credit hours. First semester. *Tu., W., Th., F., at 8; M., Tu., Th., F., at 9, 10, 11, or 2.* Prerequisite, 101-102, or two entrance units.

104. EASY CLASSICAL READING AND COMPOSITION. Four credit hours. Second semester. *Tu., W., Th., F., at 8; M., Tu., Th., F., at 10, 11, or 2.* Prerequisite, course 103, or three entrance units.

106. SCIENCE READING. Four credit hours. Second semester. *M., Tu., Th., F., at 9, 10, or 2.* Prerequisite, course 103, or three entrance units.

107. RECENT FICTION AND PROSE COMPOSITION. Four credit hours. First semester. *M., Tu., Th., F., at 10.* Prerequisite, course 104, or four entrance units.

108. MODERN DRAMA. Four credit hours. Second semester. *M., Tu., Th., F., at 10.* Prerequisite, course 107 or 109.

109. HISTORICAL FICTION AND PROSE COMPOSITION. Four credit hours. First semester. *M., Tu., Th., F., at 11.* Prerequisite, course 104, or four entrance units.

110. HISTORICAL DRAMA. Four credit hours. Second semester. *M., Tu., Th., F., at 11.* Prerequisite, course 107 or 109.

111-112. PROSE COMPOSITION AND CONVERSATION. Two credit hours. The year. *Tu., Th., at 9; W. F., at 3.* Prerequisite, course 104, or four entrance units.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

121-122. ADVANCED PROSE COMPOSITION. Two credit hours. The year. *Tu., Th., at 2.* Prerequisite, course 111-112, and open only by permission. The work is conducted in German.

125. FAUST. Three credit hours. First semester. *M., W., F., at 11.* Not open to freshmen.

126. HISTORY OF GERMAN LITERATURE SINCE THE BEGINNING OF THE EIGHTEENTH CENTURY. Three credit hours. Second semester. *M., W., F., at 11.* Not open to freshmen and the student is advised to defer the course until he has a fairly easy reading knowledge of German.

127. VOLKSLIED. Two credit hours. First semester. *W., F., at 2.*

128. LYRICS AND BALLADS. Two credit hours. Second semester. *W., F., at 2.*

129. THE CLASSICAL PERIOD. Lectures and reading. Three credit hours. First semester. *M., W., F., at 9.* Prerequisite, course 108 or 110, or 111-112.

130. EARLY NINETEENTH CENTURY LITERATURE. Three credit hours. Second semester. *M., W., F., at 9.* Prerequisite, course 108 or 110, or 111-112.

137-138. SEMINARY. Studies in modern literature. Two credit hours. The year. *Tu., at 4.*

*139. GOTHIC. Two credit hours. First semester.

*140. OLD HIGH GERMAN. Two credit hours. Second semester.

141. HISTORY OF THE GERMAN LANGUAGE. One credit hour. First semester. *M., at 8.*

142. GENERAL PHONETICS. Two credit hours. Second semester. *Tu., Th., at 9.*

147. MIDDLE HIGH GERMAN. Two credit hours. First semester. *Tu., Th., at 3.*

Introductory course with readings from Hartmann von Aue and Walter von der Vogelweide.

148. NIBELUNGENLIED AND PARZIVAL. Two credit hours. Second semester. *Tu., Th., at 3.*

Lectures on the Literature of the Middle High German period.

EXCLUSIVELY FOR GRADUATES

201. WRITERS OF THE SIXTEENTH AND SEVENTEENTH CENTURY. Two hours. First semester. Time to be arranged.

203-204. SPECIAL STUDIES IN MIDDLE HIGH GERMAN. One hour. The year. Time to be arranged.

* Not given in 1910-1911.

205-206. GRADUATE SEMINARY. Two hours. The year. Time to be arranged.

207-208. ROMANTIC WRITERS. Two hours. The year. Time to be arranged.

GREEK LANGUAGE AND LITERATURE

(Office, Room 307, University Hall)

PROFESSOR SMITH, PROFESSOR HODGMAN, PROFESSOR ELDEN

Equivalent term courses: 101-102=1; 105-106=7, 8, 9; 107-108=10, 11, 12; 109-110=13, 14, 15; 111-112=16, 17, 18; 113-114=19, 20, 21; 115-116=22, 23, 24; 117-118=32, 33, 34; 119-120=25, 26, 27; 121-122=28; 123-124=35, 36, 37.

101-102. ELEMENTARY GREEK. Four credit hours. The year. *M., Tu., Th., F., at 11.* Professor ELDEN.

105. XENOPHON: The Memorabilia of Socrates; exercises in Greek Prose. HERODOTUS: selections; with studies in Greek History. Four credit hours. First semester. *M., Tu., Th., F., at 11.* Prerequisite, course 101-102. Professor SMITH.

106. HERODOTUS, continued. HOMER: Odyssey, selections from Books I-IX. Four credit hours. Second semester. *M., Tu., Th., F., at 11.* Prerequisite, course 105. Professor SMITH.

107. LYSIAS: Eight Orations; with Studies in Attic Procedure. PLATO: Apology. Three credit hours. First semester. *Tu., Th., F., at 10.* Prerequisite, course 105-106. Professor SMITH.

108. PLATO: Crito and Phædo. HOMER: Iliad, selections. Three credit hours. Second semester. *Tu., Th., F., at 10.* Prerequisite, courses 105-107. Professor SMITH.

109. THUCYDIDES: Book I or Book VII. DEMOSTHENES: Olynthiacs. Two credit hours. First semester. Time to be arranged. Prerequisite, courses 105-108. Professor HODGMAN.

110. DEMOSTHENES: Philippics. THEOCRITUS: selections. Two credit hours. Second semester. Time to be arranged. Prerequisite, courses 105-108. Professor HODGMAN.

111. ATTIC DRAMA. EURIPIDES: Alcestis; SOPHOCLES: Oedipus Tyrannus; with Lectures on Scenic Antiquities. Two credit hours. First semester. Time to be arranged. Prerequisite, courses 105-108. Professor HODGMAN.

112. ATTIC DRAMA. Continuation of course 111; two plays. Two credit hours. Second semester. Time to be arranged. Professor HODGMAN.

113. EPIC POETRY: selections. ARISTOPHANES: *The Birds*. Two credit hours. First semester. *W., F., at 2.* Prerequisite, courses 105-108. Professor SMITH.

114. ARISTOPHANES: *The Clouds*. POST-CLASSICAL GREEK: Lucian. Two credit hours. Second semester. *W., F., at 2.* Prerequisite, courses 105-108. Professor SMITH.

*115. ANCIENT ART. Lectures on Architecture and Sculpture. Two credit hours. First semester. Time to be arranged. No prerequisite course. Professor SMITH.

*116. ANCIENT ART. Continuation of course 115. Two credit hours. Second semester. Time to be arranged. Professor SMITH.

These courses are given biennially, alternating with courses 117-118. They will not be given again until 1911-1912.

117. MEDIAEVAL ART. Lectures on Architecture and Sculpture. Two credit hours. First semester. *Tu., Th., at 1.* No prerequisite course. Professor SMITH.

118. MEDIAEVAL ART. Lectures on Sculpture and Painting. Two credit hours. Second semester. *Tu., Th., at 1.* Professor SMITH.

119. GREEK PHILOSOPHY. Two credit hours. First semester. *Tu., Th., at 2.* Prerequisite, courses 105-108. Professor SMITH.

120. STUDIES IN NEW TESTAMENT GREEK. Two credit hours. Second semester. *Tu., Th., at 2.* Prerequisite, courses 105-108. Professor SMITH.

121-122. HISTORICAL GRAMMAR. One credit hour. The year. Time to be arranged. Prerequisite, courses 105-106. Professor HODGMAN.

123. LIFE AND LITERATURE OF THE GREEKS. Lectures on Private Life, and on Epic and Lyric Poetry. Two credit hours. First semester. Time to be arranged. No prerequisite course. Professor SMITH.

124. HISTORY OF GREEK LITERATURE. Continuation of course 123. Lectures on Dramatic Poets, Historians, Philosophers, and Orators. Two credit hours. Second semester. Time to be arranged. Professor SMITH.

Courses 123 and 124 are open to students without a knowledge of Greek.

* Not given in 1910-1911.

HISTORY

(See American History and European History)

ITALIAN

(See Romance Languages)

LATIN LANGUAGE AND LITERATURE

(Office, Room 307, University Hall)

PROFESSOR DERBY, PROFESSOR HODGMAN, PROFESSOR ELDEN

Equivalent term courses: 101-102=1, 2, 3; 103-104=4, 5, 6; 105-106=7, 8, 9; 107-108=20; 109-110=21; 111-112=22; 113-114=18; 115-116=19; 117=32; 118=33; 119-120=34; 201-202=36; 203-204=30; 205-206=30a; 207-208=35; 209=37; 210=38; 211-212=31; 213-214=39, 40.

101. CICERO: *De Senectute* and *De Amicitia*; HORACE: *Odes*. Four credit hours. First semester. Prerequisite, four units of preparatory Latin. *M., Tu., Th., F., at 9, 10 or 11; Tu., W., Th., F., at 2.* Professors DERBY, HODGMAN and ELDEN.

102. HORACE: *Odes*, or OVID: *Metamorphoses*; LIVY or SALUST, or Prose Composition. Four credit hours. Second semester. Prerequisite, course 101. *M., Tu., Th., F., at 9, 10, or 11; Tu., W., Th., F., at 2.* Professors DERBY, HODGMAN and ELDEN.

103. PLINY OR CICERO: *Selected Letters*; CATULLUS OR TACITUS. Three credit hours. First semester. *M., W., F., at 9 or 3.* Prerequisite, courses 101-102. Professors DERBY and HODGMAN.

104. LATIN COMEDY: PLAUTUS and TERENCE, three plays. Three credit hours. Second semester. *M., W., F., at 9 or 3.* Prerequisite, course 103. Professors DERBY and HODGMAN.

105. ROMAN SATIRE: HORACE, JUVENAL and PERSIUS. Two credit hours. First semester. *Tu., Th., at 9.* Prerequisite, courses 101-104. Professor ELDEN.

106. THE ROMAN NOVEL: Petronius; SENECA: *Selections*. Two credit hours. Second semester. *Tu., Th., at 9.* Prerequisite, courses 101-104. Professor HODGMAN.

Courses 105-106 are important for Juniors and Seniors.

107-108. ROMAN PRIVATE LIFE. One credit hour. The year. *M., at 2.* Prerequisite, courses 101-102. Professor DERBY.

*109-110. QUIZ AND REVIEW. The year. One credit hour.

111-112. ROMAN AND COMPARATIVE LITERATURE. One credit hour. The year. *Th., at 3.* Professor ELDEN.

* Not given in 1910-1911.

Course 111-112 consists of lectures and assigned reading on Roman Literature and its influence on modern writers. Open not only to students of Latin, but also to those without a knowledge of Latin who desire to become acquainted with the broader outlines of Roman Literature and its influence upon the literatures of France, Germany, and England.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

Before entering upon graduate work in this department, the student should have had, in addition to the usual preparatory course of four years, not less than three years of collegiate study of Latin.

The plan of study for the second degree (A. M.) with Latin as the major or minor subject, should not include more than one of the courses 107-116; as a rule, these courses should be taken by undergraduates.

The ability to use French or German works of reference, a good knowledge of ancient history and of English literature will be found especially useful. Greek 115-116 (Greek Art), and Greek 117-118 (Mediaeval Art), are recommended.

Students of Latin philology will find German 139 (Gothic) valuable.

Lines of reading and of investigation, supplementary to the regular graduate courses and necessary to a symmetrical knowledge of the language, literature, and life of the Roman people, will be required according to the needs of the individual students.

117. HISTORICAL LATIN GRAMMAR: Sounds and Inflections. Two credit hours. First semester. *Tu., Th., at 9.* Prerequisite, courses 101-104. Professor HODGMAN.

This course treats of pronunciation, ablaut, vowel and consonant changes—especially vowel weakening—accent, inflection, and other similar topics essential to the understanding of the principles which govern the development of the Latin language.

118. HISTORICAL LATIN GRAMMAR: Syntax. Two credit hours. Second semester. *Tu., Th., at 9.* Prerequisite, courses 101-104. Professor ELDEN.

Lectures on the problems connected with the origin and development of certain constructions in Latin syntax; a treatment along historical lines of the syntactic uses of the cases, modes, and tenses.

Courses 117-118 are deemed essential for those who make Latin a major or minor subject of study in graduate work, and are recommended for advanced undergraduate study.

119-120. ADVANCED LATIN COMPOSITION. One or two credit

hours. The year. Time to be arranged. Prerequisite, courses 115-116. Professor HODGMAN.

Translation of English narrative and study of Latin idioms.

121. ROMAN PROSE AUTHORS: Cicero, Quintilian, Suetonius, or Tacitus. Two to five credit hours. Time to be arranged. First semester.

122. ROMAN POETS: Plautus, Terence, Lucretius, Lucan, Statius, Martial, or Silius Italicus. Two to five credit hours. Time to be arranged. Second semester.

Courses 121-122 are designed to give an opportunity to read a considerable portion of the author chosen, and are open to advanced students only. Professors DERBY, HODGMAN, and ELDEN.

EXCLUSIVELY FOR GRADUATES

201-202. ROMAN RELIGION. One hour. The year. Time to be arranged. Professor HODGMAN.

Lectures, and Fasti of Ovid.

*203-204. LATIN LITERATURE. One hour. The year. Professor ELDEN.

*205-206. ROMAN PUBLIC LIFE. One hour. The year.

A study, partly from the sources, of the growth of the Roman constitution, and of the methods of Roman administration.

*207-208. SEMINARY. Two hours. The year.

*209. LEGAL LATIN AND ROMAN LAW. Two hours. First semester.

*210. PLEBEIAN AND MEDIAEVAL LATIN. Two hours. Second semester.

*211-212. LATIN PHILOLOGY. One hour. The year.

213-214. ELEMENTS OF EPIGRAPHY AND PALAEOGRAPHY. Two or three hours. The year. Time to be arranged. Professor DERBY.

Special topics related to the subjects named above may be pursued under supervision of the instructor, and graduate students, with consent of the department, may earn an additional credit hour in any course primarily for graduates. Such lines of reading and individual investigation will usually be supplementary to the regular graduate courses.

* Not given in 1910-1911.

MATHEMATICS

(Office, Room 314, University Hall)

PROFESSOR BOHANNAN, PROFESSOR MCCOARD, PROFESSOR SWARTZEL, PROFESSOR KUHN, ASSOCIATE PROFESSOR ARNOLD, ASSOCIATE PROFESSOR RASOR, ASSISTANT PROFESSOR PRESTON, ASSISTANT PROFESSOR BAREIS, ASSISTANT PROFESSOR MORRIS, MISS RICKARD

Equivalent term courses: 121=21; 122=22; 123-124=24; 127-128=28; 131-132=31, 32, 33; 141-142=41, 42, 43; 161=34; 162=35; 163-164=36, 37; 165-166=38; 167-168=39; 171=40; 172=44; 173-174=45; 177-178=47; 179-180=48; 201-202=49.

121. COLLEGE ALGEBRA AND TRIGONOMETRY. Three credit hours. First semester. *M., W., F., at 9, 11, or 1.* Professor BOHANNAN, Professor MCCOARD, Professor KUHN, Associate Professor RASOR.

122. PLANE TRIGONOMETRY AND ANALYTICAL GEOMETRY. Three credit hours. Second semester. *M., W., F., at 9, 11, or 1.* Professor BOHANNAN, Professor MCCOARD, Professor KUHN, Associate Professor RASOR.

123-124. PROBLEMS ON ALL PAST WORK. One credit hour. The year. *F., at 10.* Associate Professor ARNOLD.

127-128. ANALYTICAL GEOMETRY AND CALCULUS. Three credit hours. The year. Prerequisite, Mathematics 121, 122, 123-124, or 131, 132, 141-142. Associate Professor RASOR.

131. COLLEGE ALGEBRA AND TRIGONOMETRY. Five credit hours. First semester. *M., Tu., W., Th., F., at 8, 9, 11, 1, 2, or 3.* Professors BOHANNAN, MCCOARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors PRESTON, BAREIS, MORRIS, Miss RICKARD.

132. PLANE TRIGONOMETRY AND ANALYTICAL GEOMETRY. Five credit hours. Second semester. *M., Tu., W., Th., F., at 8, 9, 11, 1, 2, or 3.* Professors BOHANNAN, MCCOARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors PRESTON, BAREIS, MORRIS, Miss RICKARD.

141-142. CALCULUS. Five credit hours. The year. *M., Tu., W., Th., F., at 8, 11, or 1.* Prerequisite, Mathematics 121, 122, or 131, 132. Professors BOHANNAN, MCCOARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors BAREIS, MORRIS.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

Prerequisite, Differential and Integral Calculus.

161. DETERMINANTS. Three credit hours. First semester. Assistant Professor BAREIS.

162. THEORY OF EQUATIONS. Three credit hours. Second semester. Professor McCoARD.

163-164. PLANE AND SOLID ANALYTICAL GEOMETRY. Three credit hours. The year. Associate Professor RASOR.

165-166. ADVANCED CALCULUS. Three credit hours. The year. Assistant Professor MORRIS.

167-168. DIFFERENTIAL EQUATIONS. Three credit hours. The year. Professor SWARTZEL.

171. PROJECTIVE GEOMETRY. Three credit hours. First semester. Professor BOHANNAN.

172. NON-EUCLIDIAN GEOMETRY. Three credit hours. Second semester. Professor KUHN.

173-174. MODERN HIGHER ALGEBRA. Three credit hours. The year. Associate Professor ARNOLD.

177-178. THE MATHEMATICS OF INSURANCE AND INVESTMENTS. Two credit hours. The year.

179-180. THE THEORY OF STATISTICS. Two credit hours. The year. This course alternates with 177-178. Professor KUHN.

FOR GRADUATES

201-202. (a) INFINITE SERIES AND PRODUCTS; (b) THE FUNCTIONS OF A REAL VARIABLE; (c) CALCULUS OF VARIATIONS; (d) THE THEORY OF FUNCTIONS OF A COMPLEX VARIABLE; (e) ELLIPTIC FUNCTIONS; (f) POTENTIAL FUNCTION; (g) FOURIER'S SERIES AND SPHERICAL HARMONICS; (h) GROUPS; (i) THEORY OF NUMBERS; (j) HIGHER PLANE CURVES; (k) INVARIANTS; (l) DIFFERENTIAL GEOMETRY; (m) THE MATHEMATICAL THEORY OF ELECTRICITY AND MAGNETISM; (n) THE MATHEMATICAL THEORY OF LIGHT; (o) THE MATHEMATICAL THEORY OF SOUND; (p) THE HISTORY OF MATHEMATICS. Professors BOHANNAN, McCoARD, SWARTZEL, KUHN, Associate Professors ARNOLD, RASOR, Assistant Professors BAREIS, MORRIS.

* Not given 1909-1910.

MILITARY SCIENCE AND TACTICS (Gymnasium and Armory)

CAPTAIN G. L. CONVERSE, U. S. A., RET.

The Military Department is open five days during each week of each semester. Required of all students first and second year, unless excused by the Military and Gymnasium Board.

1. MILITARY DRILL. One credit hour. First semester. *M., Tu., W., at 11 or 4.* Gallery practice *M., Tu., W., Th., 1 to 5.* Beginning about December 15.

2. MILITARY DRILL. One credit hour. Second semester. Drill Regulations and Guard Manual, *M., Tu., W., at 11, or 4,* until April 1. Gallery practice *M., Tu., W., Th., F.,* until April 1, 1 to 5.

PHILOSOPHY

(Office, Room 321, University Hall)

PROFESSOR SCOTT, PROFESSOR DAVIES

Equivalent term courses: 171-172=100, 101; 173-174=106; 175-176=107, 108; 177-178=103; 179-180=112; 183-184=115; 185-186=119; 187-188=123; 189-190=151, 152; 191-192=155.

171-172. ELEMENTS OF PHILOSOPHY AND INTRODUCTORY LOGIC. The year. Three credit hours. *M., W., F., at 11.* Open to students of the first and second years. Professor SCOTT.

173-174. INTRODUCTION TO PHILOSOPHY. The year. Three credit hours. *M., W., F., at 2.* Prerequisite, either Philosophy 171-172, 177-178, 189-190, or Psychology 101. Professor SCOTT.

175-176. THEORY OF KNOWLEDGE AND METAPHYSICS. The year. Two credit hours. *M., W., at 3.* Prerequisite, Philosophy 173-174. Professor SCOTT.

177-178. ETHICS. The year. Two credit hours. *Tu. and Th., at 11.* Professor SCOTT.

179-180. ADVANCED ETHICS. The year. Two credit hours. *Tu., Th., at 3.* Prerequisite, Philosophy 177-178. Professor SCOTT.

181-182. ADVANCED LOGIC. The year. Three credit hours. *M., W., F., at 3.* Prerequisite, Philosophy 172. Professor DAVIES.

183-184. AESTHETICS. The year. Two credit hours. *Tu., Th., at 2.* Open to first year students. Professor DAVIES.

185-186. PHILOSOPHY OF RELIGION. The year. Two credit hours. *Tu., Th., at 2.* Prerequisite, at least one year of study in Philosophy or Psychology. Professor SCOTT.

187-188. PHILOSOPHY OF MIND. The year. Two credit hours. *Tu., Th., at 11.* Prerequisite, either Philosophy 189-190, 171-172, 173-174, or Psychology 101. Professor DAVIES.

189-190. HISTORY OF PHILOSOPHY. The year. Three credit hours. *M., W., F., at 2.* Open to first year students. Professor DAVIES.

191-192. HISTORY OF CHRISTIAN PHILOSOPHY. The year. Three credit hours. Time to be arranged. Open to first year students. Professor DAVIES.

PHYSICAL EDUCATION FOR MEN (The Gymnasium)

PROFESSOR WINGERT, MR. KIBLER, MR. BAUER

1. PHYSICAL EDUCATION. One credit hour. Two hours per week. The year. (a) Lectures on hygiene and physiology of exercise first two weeks, first semester. (b) Corrective: A graded course of free-hand exercise stretching, relaxing, stimulating, exercise with light hand apparatus for the relief and correction of slight body defects, deformities, improper carriage, etc. (c) Educative: Graded progressive exercise on the apparatus and mats to promote muscular tone, vigor, vitality, endurance. (d) Recreative: Gymnasium games, mental relaxation, non-competitive exercises. (e) Ability to swim is required and free instruction is given to those who cannot swim.

2. ADVANCED EXERCISES. Elective. (a) Advanced exercises on the apparatus and mats. (b) Combatative exercises—boxing, fencing, wrestling. A small charge is made to those electing this work. (c) Recreative: Football, baseball, basketball, tennis, track and field sport, cross-country running, etc. Special hours are arranged for those electing the above exercise and credit given in regular course.

PHYSICAL EDUCATION FOR WOMEN (The Gymnasium)

DR. LITTLEJOHN, MISS DARNELL

1. PHYSICAL EDUCATION. One credit hour. The year. (a) Lectures on hygiene and purpose of different kinds of physical exercises, four hours per week, first two weeks of first semester, first week of second semester. Practical work in gymnasium, as follows: (b) Corrective work: Exercises for correction of faulty position of different parts of body, and of deformities; for development of chest, etc. (c) Educative work: Exercises to develop co-ordination of groups of muscles, accuracy of movement, and to impart grace and beauty and a ready expression of thought in physical motions. (d) Recreative: Classic dancing, and rhythmic movements, gymnastic games, and relaxing exercises. (e) Athletics (elective): Carefully supervised basket ball, running, etc., for those who desire it. Four

hours per week during the first year of student's residence. *M., Tu., W., Th., F., at 9; M., Tu., Th., F., at 10.*

A physical examination is made by the directors of every woman entering this course before she can begin the gymnasium work, and if necessary, special work will be prescribed to meet her physical needs.

2. PHYSICAL EDUCATION. Course 1 required. One credit hour. The year. Four hours per week. *M., Tu., Th., F., at 10. M., Tu., W., Th., F., at 11.*

PHYSICS

(Office, Room 24, Physics Hall)

PROFESSOR COLE, PROFESSOR THOMAS, ASSOCIATE PROFESSOR EARHART,
ASSISTANT PROFESSOR BLAKE, ASSISTANT PROFESSOR SHEARD,
ASSISTANT PROFESSOR SMITH, MR. HEIL, MR. BARNES,
MR. NUSBAUM, AND DEPARTMENT FELLOWS

Equivalent term courses: 105-106=11; 121-122=12; 118=18; 123-118=18; 123-124=13; 127-128=28; 141-142=14a; 143-144=14c; 145-146=16; 169-170=21; 211-212=22; 203-204=25; 205-206=26; 207-208=27; 201-202=15.

103-104. GENERAL PHYSICS. Four credit hours. The year. Three recitations and one two-hour laboratory period. Lectures, *Tu., Th., F., 8*; laboratory, *W., 2 to 4*. A non-mathematical course for students who have no entrance credit in physics. Associate Professor EARHART.

105-106. GENERAL PHYSICS. Four credit hours. The year. Lectures, *M., W., 8 or 2*. Laboratory, *Tu., Th., 8 to 10, or Th., F., 2 to 4*. Prerequisite, entrance credit in physics. Assistant Professor BLAKE.

121-122. LABORATORY. Three to five credit hours. The year. *M., Tu., W., 1 to 4*. Prerequisite, Physics 103-104, or 105-106. Assistant Professor SMITH.

118. THE PRODUCTION AND USE OF ELECTRIC CURRENTS. Theory and practice. Two credit hours. Second semester. Time to be arranged. Prerequisite, Physics 105-106, with some additional general laboratory course desirable. Professor THOMAS.

A non-technical course in dynamo currents, for teachers and for general science students.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

123-124. ADVANCED LABORATORY. Three to five credit hours.

The year. Prerequisite, Mathematics 121-122. Assistant Professor SMITH.

141-142. ADVANCED MECHANICS AND MOLECULAR PHYSICS. Three credit hours. The year. *Tu., W., Th., at 4.* Prerequisite, Physics 103-104 or 105-106. Calculus precedes or accompanies. First term, Mechanics, Assistant Professor BLAKE; second term, Molecular Physics and Heat, Associate Professor EARHART.

This course alternates with 143-144.

*143-144. ADVANCED LIGHT AND ELECTRICITY. Three credit hours. The year. *Tu., W., Th., at 4.* Prerequisite, Physics 103-104 or 105-106; calculus precedes or accompanies. First term, Light, Assistant Professor SHEARD; second term, Electricity and Magnetism, Associate Professor EARHART. This course alternates with 141-142.

Courses 141-142 and 143-144 together constitute a two-year cycle, moderately advanced, covering the whole subject of Physics.

145-146. PHYSICAL SEMINARY. One credit hour. The year. Prerequisite, a year of college work in physics. Professor COLE.

169-170. THEORETICAL PHYSICS. An advanced course in Light. Two credit hours. The year. Prerequisite, Physics 105-106, and Mathematics 141-142, or equivalents. Professor COLE.

127-128. THE THEORY AND PRACTICE OF ELECTRICAL MEASUREMENTS. Three to five credit hours. The year. Prerequisites, Physics 105-105, or equivalent; a course in Electrical Measurement, and Mathematics 141-142, or equivalent. Professor THOMAS.

EXCLUSIVELY FOR GRADUATES

*211-212. THEORY OF OSCILLATIONS WITH THEIR APPLICATIONS TO WIRELESS TELEGRAPHY. Two hours. The year. Prerequisite, Physics 105-106, and Mathematics 141-142, or equivalents. Alternates with 213-214. Assistant Professor BLAKE.

213-214. CONDUCTION OF ELECTRICITY THROUGH GASES AND RADIOACTIVITY. Two hours. The year. Prerequisite, same as for 211-212. Associate Professor EARHART, and Assistant Professor BLAKE.

*203-204. THEORETICAL MECHANICS. Three hours. The year. Prerequisites, Physics 105-106, and Mathematics 141-142, or equivalents. Assistant Professor BLAKE.

*205-206. THERMODYNAMICS AND ELECTROLYTIC CONDUCTION. Two

* Not given in 1910-1911.

hours. The year. Prerequisites, Physics 105-106, and Mathematics 141-142, or equivalents. Assistant Professor SMITH.

207-208. THEORY OF ELECTRICITY AND MAGNETISM. Three hours. The year. Prerequisites, Physics 105-106, and Mathematics 141-142, or equivalents. Assistant Professor SMITH.

Courses 203-204, 205-206, 207-208, and 169-170 together form an advanced two-year cycle, covering the whole ground of physics.

201-202. RESEARCH LABORATORY. Three to five hours. The year. Prerequisites, two years of laboratory work in physics. Professor COLE, Professor THOMAS, Associate Professor EARHART, Assistant Professor BLAKE, Assistant Professor SMITH.

POLITICAL ECONOMY

(See Economics and Sociology)

POLITICAL SCIENCE

(Office, Room 200, University Hall)

PROFESSOR SPENCER, ASSISTANT PROFESSOR SHEPARD

Equivalent term courses: 101-102=1; 103-104=4; 106=8; 110=13; 111-112=15; 115-116=10; 117-118=16.

101-102. CONSTITUTIONAL GOVERNMENT. Three credit hours. The year. *M., W., F., at 9 or 1.* Professor SPENCER, Assistant Professor SHEPARD.

This course is not open to Freshmen except those who offer for admission to the University three units in History-Civics. It affords a general introduction to the field of political science, and should precede all other courses offered by the department; but in some cases advanced courses may be taken in conjunction, if the consent of the instructor be obtained. It is strongly recommended that this course be preceded by a year's work in European or American history.

103-104. INTERNATIONAL LAW. Two credit hours. The year. *Tu., Th., at 10.* Professor KNIGHT.

A study of the principles of international law in their growth and present status, together with an examination of some of the unsettled questions in the field. Lawrence, *Principles of International Law*, to be used as a text-book, with frequent citations of authorities to be read, and with some leading cases to be thoroughly examined.

* Not given in 1910-1911.

105. COMPARATIVE CONSTITUTIONAL LAW. Three credit hours. First semester. *M., W., F., at 9.* Assistant Professor SHEPARD.

A comparative study of the historical evolution, the structure and function of the constituent, legislative and electoral organs of government.

*106. MUNICIPAL GOVERNMENT AND PROBLEMS. Three credit hours. Second semester. *M., W., F., at 9.* Given biennially, alternating with course 110. Professor SPENCER.

A comparative study of the *city*, in ancient and modern times, in America, England, and Europe; lessons from experience, projects for reform.

*107. PARTY GOVERNMENT. Three credit hours. First semester. *M., W., F., at 3.* Given biennially, alternating with course 109. Professor SPENCER.

Parties will be considered as extra-governmental agencies for political purposes; their reason for being, their organization and methods, the effect of their activity upon governmental processes.

108. COLONIAL GOVERNMENT AND ADMINISTRATION. Three credit hours. Second semester. *M., W., F., at 3.* Given biennially, alternating with course 114. Assistant Professor SHEPARD.

A comparative study of colonial political institutions and administrative problems, with special attention to the colonies and dependencies of the United States.

109. THE GOVERNMENT OF OHIO. Three credit hours. First semester. *M., W., F., at 3.* Given biennially, alternating with course 107. Professor SPENCER.

The evolution of the present constitution of this state, and governmental institutions, legislative, executive, judicial, created in accordance therewith.

110. COMPARATIVE ADMINISTRATION. Three credit hours. Second semester. *M., W., F., at 9.* Given biennially, alternating with course 106. Professor SPENCER.

This course will include (1) a study of the principles of administration, the methods for organizing the agencies for execution of the will of the state, and the relation of the *officer* to government and the community; (2) a description of the administrative systems of Ohio, the United States, England, France, and Prussia.

111-112. INTRODUCTION TO JURISPRUDENCE. Two credit hours. The year. *Tu., Th., at 9.* Professor SPENCER.

* Not given in 1910-1911.

A preliminary study of legal concepts. Robinson, *Elements of American Jurisprudence*, will be used as a text-book, supplemented by readings in the works of Blackstone, Austin, Sohm, and Holland, and in American cases.

*114. PROBLEMS IN INTERNATIONAL POLITICS. Two credit hours. Second semester. *Tu., Th., at 3.* Given biennially, alternating with course 108. Assistant Professor SHEPARD.

An investigation of selected problems and topics in current international and foreign politics. A considerable amount of reading in the English and American reviews will be assigned.

115-116. HISTORY OF POLITICAL THEORIES. Two credit hours. The year. *Tu., Th., at 8.* Assistant Professor SHEPARD.

A study of the evolution of political philosophy from the Greeks to the nineteenth century, in its relation, as cause and effect, to historical forces. Dunning's *History of Political Theories* will serve as a basis for the course; readings will be assigned in the works of the more important political philosophers.

117-118. SEMINARY IN POLITICAL SCIENCE. *M., at 4.*

Students will pursue independent investigations, meeting once a week for conference and criticism. The topic for consideration in 1910-1911 will be, The Development of Political Thought in the Nineteenth Century.

PSYCHOLOGY

(Office, Room 404, University Hall)

PROFESSOR MAJOR, PROFESSOR HAINES, PROFESSOR DAVIES

Equivalent term courses: 101-102=1 and 1a; 111-112=3; 115-116=4; 119=8; 120=7; 125=10; 126=11; 129-130=14; 133-134=16; 137-138=20; 141-142=31; 145-146=32; 201-202=33.

101-102. GENERAL PSYCHOLOGY. Introductory Course. Three credit hours. The year. *M., W., F., at 11, 1, 2, or 3.* Professor MAJOR, Professor HAINES.

111-112. EXPERIMENTAL PSYCHOLOGY. Three credit hours. The year. Lecture, *Tu., at 1*; Laboratory, *Tu., 2 to 4, and Th., 1 to 3.* Prerequisite, Psychology 101-102. Professor HAINES.

A systematic training course in the method of introspection, which brings one to a first-hand acquaintance with the facts of the mental life. Topics: The sense fields, geometrical optical illusions,

* Not given in 1910-1911.

stereoscopic and pseudoscopic illusions, tactual space perception, auditory localization, attention, reaction-time, memory types, tonal fusion, association, and analysis of judgment.

*115-116. MENTAL DEVELOPMENT. Two credit hours. The year. Professor MAJOR.

This course is designed (1) to describe the characteristic features of the child mind, (2) to study the principles and empirical data of the development of the individual human mind.

120. ABNORMAL PSYCHOLOGY. Three credit hours. Second semester. *M., W., F., at 1.* Prerequisite, Psychology 101-102. Professor HAINES.

Studies of the main types of insanity, both for the knowledge of the constitution of the abnormal mind, and for the knowledge, gained by contrast, of the normal mind. Clinics, lectures, and recitations.

119. ANIMAL PSYCHOLOGY. Three credit hours. First semester. *M., W., F., at 1.* Prerequisite, Psychology 101-102. Professor HAINES.

A systematic following-out of the steps in the evolution of mental processes through the animal series from the protozoa to the apes, with a special look-out for the *method of organization*. Studies in the development of the senses, association, memory, perception, attention, suggestion, accommodation, imitation, learning-capacity, and practical judgment.

*125. SOCIAL PSYCHOLOGY. Three credit hours. First semester. Prerequisite, Psychology 101-102. Professor HAINES.

The social factor in the development of personality, and the mental process involved in social development, including such topics as suggestion, imitation, invention, sympathy, modesty, the socially unfit, and the genius.

*126. FOLK PSYCHOLOGY. Three credit hours. Second semester. Professor HAINES.

The psychic factors involved in group activities, such as the play of children, art (especially of savages and barbarians), mob phenomena, family life, and ethnic groups.

129-130. ADVANCED PSYCHOLOGY. Two credit hours. The year. Time to be arranged. Prerequisite, Psychology 101-102. Professor DAVIES.

This course includes a discussion of the methods of Psychology, and a detailed consideration of the main psychological concepts—

* Not given in 1910-1911.

feeling, conation, perception, imagination, etc., both in themselves and in their relation to one another.

*133-134. INDIVIDUAL PSYCHOLOGY. Two credit hours. The year. Professor MAJOR.

A study of individual variations in mental capacity and development.

137-138. GENERAL PSYCHOLOGY. Advanced Course. Three credit hours. The year. Time to be arranged. Professor MAJOR.

This course is open to students who have completed Psychology 1, or the equivalent, and who wish to make a more intensive study than is practical in an introductory course of certain topics selected from the field of general psychology.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

141-142. RESEARCH IN EXPERIMENTAL PSYCHOLOGY. Two credit hours or more. The year. Professor HAINES.

The investigation of problems in any field of Psychology by the aid of the experimental method. The student selects a problem in consultation with the instructor, who carefully considers the student's interests. Members of the laboratory assist each other as observers.

145-146. SEMINARY IN PSYCHOLOGY. Two to five credit hours. The year. Time to be arranged. Professor MAJOR, Professor HAINES.

EXCLUSIVELY FOR GRADUATES

This course is open only to advanced students in philosophy, psychology, or education.

201-202. GRADUATE COURSES IN PSYCHOLOGY. Three to ten hours. The year. Professor MAJOR, Professor HAINES.

These courses are to meet the needs of individual graduate students who are pursuing a major or minor study in the department of Psychology.

RHETORIC AND ENGLISH LANGUAGE

(See English)

* Not given in 1910-1911.

ROMANCE LANGUAGES AND LITERATURES

(Office, University Hall, Room 305)

PROFESSOR BOWEN, PROFESSOR BRUCE, ASSOCIATE PROFESSOR INGRAHAM,
 ASSISTANT PROFESSOR PEIRCE, ASSISTANT PROFESSOR
 HAMILTON, DR. FALORSI

Courses 101, 102, 103, and 104 in French must precede all others (except course 106). Courses 117 to 120 inclusive in French must be preceded by courses 107, 109, and 110, or an equivalent.

I. FRENCH

Equivalent term courses: 101-102=1; 103-104=2; 107=7; 109-110=4, 5, 6; 111-112=16, 17, 18; 113-114=8, 9, 10; 115-116=11, 12, 13; 117-118=14; 119-120=15.

FOR UNDERGRADUATES

101-102. ELEMENTARY FRENCH. Four credit hours. The year. Grammar: Fraser and Squair's, or equivalent. Reader: Aldrich and Foster's, or Bowen's First Scientific. Historical and narrative prose; one or more prose comedies. Nine sections. *M., Tu., Th., F., at 9, 10, 11, or 2; Tu., W., Th., F., at 3.* All instructors.

Stress is laid first upon the acquisition of a correct pronunciation, after which the entire energy of the student is directed toward the attainment of a full and accurate reading knowledge of the language. Grammar and composition made to contribute to this end. Sight reading emphasized.

103-104. MODERN FRENCH LITERATURE. Four credit hours. The year. Four sections. *M., Tu., Th., F., at 10, 11, or 2.* Prerequisite, courses 101-102, or equivalent. Professor BRUCE, Assistant Professor PEIRCE, Assistant Professor HAMILTON.

The work of the year deals with the following subjects: (1) Contes; (2) The novel (Balzac or Hugo); (3) Lyric poetry; (4) Romantic drama (Hugo). Prose composition. Systematic attention given to syntax and idiom. Lectures supplement the work. Private reading required.

106. SCIENCE READING. Four credit hours. Second semester. *M., Tu., Th., F., at 10.* Prerequisite, course 103. Dr. FALORSI.

A course of rapid reading introductory to the vocabulary of scientific literature.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

107. ADVANCED PROSE COMPOSITION. Two credit hours. First semester. *Tu., Th., at 8 or 11.* Professor BOWEN, Assistant Professor PEIRCE.

Cameron's French Composition, followed by other selections. Dictation. Conversation.

108. HISTORY OF FRENCH LITERATURE. Two credit hours. Second semester. Lectures and illustrative readings. *Tu., Th., at 11.* Associate Professor INGRAHAM.

109. SEVENTEENTH CENTURY DRAMA: MOLIERE AND CORNEILLE. Three credit hours. First semester. *M., W., F., at 8 or 11.* Given biennially, alternating with course 111. Professor BOWEN, Assistant Professor PEIRCE.

Lectures on the growth of French comedy and tragedy. Critical study of representative plays of Molière, Regnard, and Corneille. Collateral reading. Assigned topics and reports.

110. SEVENTEENTH CENTURY TRAGEDY AND PROSE. Three credit hours. Second semester. *M., W., F., at 8 or 11.* Given biennially, alternating with course 112. Professor BOWEN, Assistant Professor PEIRCE.

Representative dramas of Racine. Study of Descartes, Pascal, La Bruyère and others. Warren's Selections. Lectures, with collateral reading and reports.

*111. EIGHTEENTH CENTURY DRAMA. Three credit hours. First semester. *M., W., F., at 8 or 11.* Given biennially, alternating with course 109. Professor BOWEN, Assistant Professor PEIRCE.

Lectures on the growth of French comedy, with work centering on Marivaux and Beaumarchais. Study of the drama of Voltaire. Collateral reading.

*112. FRENCH SOCIETY IN THE SEVENTEENTH CENTURY. Three credit hours. Second semester. *M., W., F., at 8 or 11.* Given biennially, alternating with course 110. Professor BOWEN, Assistant Professor PEIRCE.

Writers who portray the social life of the seventeenth century in France. Special reference to the Précieux movement. Crane's Selections, and others. Lectures, with collateral reading.

113. RECENT FRENCH PROSE. Two credit hours. First semester. *Tu., Th., at 9.* Given biennially, alternating with course 115. Professor BRUCE.

Rapid reading, with lectures. Selections from the works of such writers as Bazin, Daudet, Loti, and Zola.

114. PRACTICE IN SPEAKING AND WRITING FRENCH. Two credit hours. Second semester. *Tu., Th., at 9.* Students wishing to elect

* Not given in 1910-1911.

this course must have the consent of the instructor in charge. Given biennially, alternating with course 116. Professor BRUCE.

*115. EIGHTEENTH CENTURY PROSE. Two credit hours. First semester. *Tu., Th., at 9.* Given biennially, alternating with course 113. Professor BRUCE.

Selections from Voltaire (ed. Cohn and Woodward), and others.

*116. ADVANCED CONVERSATIONAL PRACTICE. Two credit hours. Second semester. *Tu., Th., at 9.* Students wishing to elect this course must have the consent of the instructor in charge. Given biennially, alternating with course 114. Professor BRUCE.

117-118. FRENCH SEMINARY A. Two credit hours. The year. *M., 3 to 5.* Given biennially, alternating with courses 119-120. Professor BOWEN or Professor BRUCE.

Studies in specific literary fields. The subject for 1910-1911 will probably be: The development of the French novel.

*119-120. FRENCH SEMINARY B. Two credit hours. The year. *M., 3 to 5.* Given biennially, alternating with courses 117-118. Professor BOWEN.

Studies in Old French (with emphasis of la Chanson de Roland) and in the language and writers of the sixteenth century. Special consideration of Montaigne.

II. ITALIAN

Equivalent term courses: 101-102=1; 103, 104=2.

FOR UNDERGRADUATES

101-102. ELEMENTARY ITALIAN. Two credit hours. The year. *M., W., at 9.* Grammar (Grandgent's or Young's) and Reader (Bowen's). Modern prose. Comedies of Goldoni. Students are advised to postpone the election of this course until they have completed French 101-102, or an equivalent. Professor BRUCE or Dr FALORSI.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

103. THE ITALIAN NOVEL. Two credit hours. First semester. Manzoni (*I Promessi Sposi*). Lectures. Time to be arranged. Prerequisite, Italian 101-102. Professor BRUCE.

104. DANTE. Two credit hours. Second semester. Selections from *The Inferno* and *Paradiso*. Lectures. Time to be arranged. Prerequisite, Italian 103. Professor BRUCE.

* Not given in 1910-1911.

III. SPANISH

FOR UNDERGRADUATES

Equivalent term courses: 101-102=1; 103-104=2; 105-106=3.

101-102. **ELEMENTARY SPANISH.** Four credit hours. The year. Grammar (Hills and Ford's), and Ingraham's *Victoria y Otros Cuentos*. Easy prose and plays. Composition and practice in speaking. Four sections. *M., Tu., Th., F., at 9, 11, or 2.* Associate Professor INGRAHAM, Assistant Professor HAMILTON, Mr. CHAPIN.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

103-104. **MODERN SPANISH LITERATURE.** Four credit hours. The year. *Tu., W., Th., F., at 3.* Prerequisite, Spanish 101-102, or equivalent. Associate Professor INGRAHAM.

The modern novel and drama. Lectures covering a survey of the literature. Composition and practice in speaking continued.

105. **CERVANTES: DON QUIXOTE.** Two credit hours. First semester. Time to be arranged. Prerequisite, Spanish 103-104. Associate Professor INGRAHAM.

106. **LOPE DE VEGA AND CALDERON.** Two credit hours. Second semester. Time to be arranged. Prerequisite, Spanish 105. Associate Professor INGRAHAM.

EXCLUSIVELY FOR GRADUATES

Equivalent term courses: 201-202=31; 203-204=32; 205-206=33.

201-202. **INTRODUCTION TO ROMANCE PHILOLOGY.** Two hours. The year. Time to be arranged. Professor BOWEN.

Origin and distribution of the Romance Languages and dialects. Comparative phonology and morphology of French, Italian, and Spanish. Peculiarities of syntax. Lectures and reading of illustrative texts.

203-204. **OLD PROVENÇAL.** One hour. The year. Time to be arranged. Professor BOWEN.

Study of the language and literature of the Troubadours. Appel's *Provenzalische Chrestomathie* (Leipzig, 3rd edition); Grandgent's *Provençal Phonology and Morphology*.

205-206. **HISTORY OF THE LITERARY MOVEMENT IN FRANCE IN THE FIRST HALF OF THE NINETEENTH CENTURY.** Two hours. The year. Time to be arranged. Professor BRUCE.

The attention of all students in Romance Languages is called to courses 111 and 112 in Latin, given by Professor Elden, on the subject of Roman and Comparative Literature. This course is strongly recommended.

SOCIOLOGY

(See Economics and Sociology)

SPANISH

(See Romance Languages)

ZOOLOGY AND ENTOMOLOGY

(Office, Room 1, Biological Hall)

PROFESSOR OSBORN, PROFESSOR LANDACRE, ASSOCIATE PROFESSOR HINE,
 ACTING PROFESSOR BARROWS, MR. DITTO, MISS
 HOLLISTER, AND MR. SIM

Equivalent term courses: 101-102=1; 103-104=2; 119-120=12, 13, 14; 121-122=15, 16, 17; 123-124=18; 125-126=19, 20; 131-132=34; 133-134=21; 135-136=22; 137-138=23; 139-140=24; 141-142=25; 143-144=26; 247-248=30; 249-250=33.

101-102. ELEMENTARY ZOOLOGY. Three credit hours. The year. *M. and F., at 9 and 10; Tu. and Th., at 8 and 9.* Laboratory *M., T., W., Th., and F., 1 to 3, and W., 8 to 10.* Professor OSBORN, Professor LANDACRE, Professor BARROWS.

An introductory general course intended for general culture as a foundation for more advanced courses.

103. COMPARATIVE ANATOMY OF THE VERTEBRATES: VERTEBRATES TO BIRDS. Three to five credit hours. First semester. Prerequisite, course 101-102, or equivalent. Quiz No. 1. Laboratory, *W., Th., F., 1 to 4.* Professor LANDACRE.

104. COMPARATIVE ANATOMY OF VERTEBRATES: BIRDS AND MAMMALIA. Three to five credit hours. Second semester. Prerequisite, course 101-102, or equivalent. Hours same as 103. Professor LANDACRE.

119. GROSS ANATOMY OF THE FROG. Three to five credit hours. First semester. Time to be arranged. Professor LANDACRE.

120. EMBRYOLOGY OF THE FROG. Three to five credit hours. Second semester. Prerequisite, course 101-102 or 119. Time to be arranged. Professor LANDACRE.

121-122. INVERTEBRATE MORPHOLOGY. Three to five credit hours. The year. Time to be arranged. Prerequisite, course 101, 102. Professor OSBORN.

123-124. INVERTEBRATE EMBRYOLOGY. Three to five credit hours. The year. Time to be arranged. For graduates, prerequisite, courses 101, 102, 103, and 104. Professor OSBORN.

125. VERTEBRATE EMBRYOLOGY, KARYOKINESIS, AND THE EARLY DEVELOPMENT OF AMPHIOXIS, FISHES, AND AMPHIBIANS. Three to five credit hours. First semester. Prerequisite, course 101-102. Lecture *Th.*, at 1. Laboratory *Th. and F.*, 1 to 4. Professor LAND-ACRE.

126. VERTEBRATE EMBRYOLOGY: BIRDS AND MAMMALS. Three to five credit hours. Second semester. Prerequisite, course 101-102. Lecture *Th.*, at 1. Laboratory *Th. and F.*, 1 to 4.

129-130. QUANTITATIVE STUDIES IN VARIATION. Heredity and Animal Behavior. Three to five credit hours. The year. Time to be arranged. Prerequisite, courses 101-102, or equivalent. Associate Professor BARROWS.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

131-132. EVOLUTION. Three credit hours. The year. Pre-requisite, one year of Zoology or an equivalent. *M.*, *W.*, and *F.*, at 8. Professor OSBORN, Professor LANDACRE.

A discussion of the facts and theories of the origin, development, and distribution of animal life. The first semester deals chiefly with variation, isolation, and heredity as the fundamental factors in Evolution of Animal forms. The second semester is devoted to geographical distribution, adaptations, and the appreciation of the lines of heredity to practical problems.

133. COMPARATIVE NEUROLOGY. Three to five credit hours. First semester. Time to be arranged. The origin and structure of the nervous system of the lower vertebrates. Professor LANDACRE.

134. COMPARATIVE NEUROLOGY. Three to five credit hours. Second semester. Time to be arranged. The origin and structure of the nervous system of the higher vertebrates. Professor LANDACRE.

135-136. CYTOLOGY. Three to five credit hours. The year. Time to be arranged. Prerequisite, course 101-102, 103, 104, or 121-122.

137-138. ENTOMOLOGY. Three to five credit hours. Time to be arranged. The year. Prerequisite, course 101-102. Professor OSBORN.

139. ORNITHOLOGY. Two credit hours. First semester. Lecture *M.*, at 10. Laboratory to be arranged. The first semester is devoted to the anatomy of the birds and to the study of museum specimens. Associate Professor HINE.

140. ORNITHOLOGY. Two credit hours. Second semester. Lecture *M.*, at 10. Laboratory to be arranged. This semester is devoted to systematic and field work.

141-142. RESEARCH WORK. Subject to be assigned. Five to ten credit hours. The year. Prerequisite, course 101-102, and the equivalent of 103-104, or 121-122, or 125-126. Professor OSBORN, Professor LANDACRE.

143-144. SEMINARY. One credit hour. *Tu., at 4.* The year. Professor OSBORN, Professor LANDACRE.

FOR GRADUATES ONLY

247-248. INVERTEBRATE ZOOLOGY. The year. Five hours. Time to be arranged. Professor OSBORN.

249-250. VERTEBRATE EMBRYOLOGY. Three to five hours. The year. Subject to be assigned. Time to be arranged.

ANNOUNCEMENTS OF OTHER DEPARTMENTS OF THE UNIVERSITY

The faculty of the College of Arts, Philosophy, and Science will accredit towards the degree of Bachelor of Arts a limited amount of work in the courses announced below. The student desiring to elect one or more of these courses is required to file a petition with his election card in June, showing the special purpose which he has in view, and bearing the written approval of the professor in charge of the course desired. The Executive Committee will not count towards the degree in Arts any course named below that is not allied to the work of the student in the College of Arts, Philosophy, and Science. But a student with no conditions outstanding who has at least thirty hours to his credit may, without petition, elect any course in the University on which he is prepared to enter, as extra work, not counting towards the degree of Bachelor of Arts.

AGRICULTURAL CHEMISTRY (Townshend Hall)

PROFESSOR WEBER, ASSOCIATE PROFESSOR LYMAN

121-122. FOOD INSPECTION AND ANALYSIS. Three to five credit hours. Time to be arranged. The year. Prerequisite, course 103-104, or an equivalent preparation in quantitative analysis. Professor WEBER, Associate Professor LYMAN.

DOMESTIC SCIENCE (Hayes Hall)

PROFESSOR WARDALL, ASSOCIATE PROFESSOR WHITE, ASSOCIATE PROFESSOR FLINT, MISS BLOHM

I. DOMESTIC SCIENCE

101-102. THE SELECTION AND PREPARATION OF FOODS. Four credit hours. The year. *M.*, at 8; *M.*, *Tu.*, 1 to 3, or *Th.*, *F.*, 1 to 3, or *Tu.*, *Th.*, 8 to 10. Prerequisite, Chemistry 106 or 110. Associate Professor WHITE.

A study of nutritive principles: their occurrence in ordinary foodstuffs, their cost from various sources, and the principles involved in their preparation. Lecture and recitation are combined with laboratory work.

II. DOMESTIC ART

101-102. TEXTILES. Two credit hours. The year. Recitation, *W.*, at 11. Laboratory sections, *Tu.*, *W.*, or *Th.*, 1 to 3. Prerequisite, or concurrent, Art 101-102.

This course includes the study of fibers and fabrics from an historic, economic, and social standpoint. In the laboratory the making of articles involves the proper selection of material and the working out of suitable designs. Associate Professor FLINT, Miss BLOHM.

ARCHITECTURE

(Office, Brown Hall)

PROFESSOR BRADFORD, ASSOCIATE PROFESSOR CHUBB, MR. HASKETT

Equivalent term courses: 111 or 112=33; 122=36.

111 or 112. PHOTOGRAPHY. Two credit hours. First or second semester. *M.*, *Tu.*, 1 to 3; *W.*, *Th.*, 1 to 3; *F.*, 1 to 3; *S.*, 8 to 10. Prerequisite, Elementary Chemistry.

122. PHOTOGRAPHY. Two credit hours. Second semester. *M.*, *Tu.*, 1 to 3; *Th.*, *F.*, 1 to 3. Prerequisite, Architecture 111 or 112.

ART

(Office, Hayes Hall)

ASSOCIATE PROFESSOR LAVER, ASSISTANT PROFESSOR TITSWORTH, MISS FINNEY

Equivalent term courses: 101-102=10, 11, 12; 103-104=20, 21, 22; 105-106=13, 14, 15; 107-108=30, 31, 32; 111-112=35, 36, 37; 119-120=4.

101-102. DESIGN AND COMPOSITION. Two credit hours. The year. *M.*, *W.*, *Th.*, 1 to 3; *M.*, 10 to 12. Assistant Professor TITSWORTH, Miss FINNEY.

This course is designed to develop appreciation of harmony of line, space, and color. It brings into play the creative imagination and establishes a basis for critical judgment along all Art lines. Nature motives used. Study of color, theory, and harmony. Medium: pencil, ink, charcoal, and water color.

103-104. STILL LIFE COMPOSITION. One or more credit hours. The year. Lecture *M.* or *Th.*, at 11. Studio hours, *M.*, 9 to 12, 1 to

4; *W.*, 1 to 4; *Th.*, 9 to 12; *F.*, 9 to 12, 1 to 4. Associate Professor LAVER, Assistant Professor TITSWORTH, Miss FINNEY.

This course offers training in form and the study of neutral values and light and shade as related to color. Medium: charcoal.

105-106. DESIGN AND COMPOSITION. Two credit hours. The year. Prerequisite, Art 102. *Tu.*, 1 to 3; *Th.*, 10 to 12. Associate Professor LAVER, Assistant Professor TITSWORTH.

Continuation of Art 102 with advance problems in color and line as applied to decoration. Three credit hours.

107-108. STILL LIFE COMPOSITION IN COLOR VALUES. One or more credit hours. The year. Prerequisite, Art 104. Lecture *W.*, at 1. Studio hours, *M.*, 9 to 12, 1 to 4; *W.*, 1 to 4; *Th.*, 9 to 12, 1 to 4. Associate Professor LAVER, Assistant Professor TITSWORTH.

Cast drawing. Medium: charcoal. Outdoor sketching and study from life.

111-112. STUDY FROM HEAD AND COSTUME MODEL. One or more credit hours. The year. Prerequisite, see Instructor. Lectures *Tu.*, at 10, or *Th.*, at 2. Studio hours, *Tu.*, *Th.*, 9 to 12, 1 to 4. Assistant Professor TITSWORTH.

Medium: selected. Outdoor sketching in color.

119-120. ART APPRECIATION. One credit hour. The year. Required of students taking Art 113, 114, 115, 116, 117, 118. *M.*, at 4. Associate Professor LAVER.

CIVIL ENGINEERING

(Office, Room 33, Brown Hall)

ASSISTANT PROFESSOR CHAMBERLIN, MR. WARD, MR. HINKLE

Equivalent term course: 124=21.

(Of the twenty-eight courses offered in the Department of Civil Engineering, the following course is open to students of the College of Arts, Philosophy, and Science:)

124. SURVEYING. Three credit hours. Second semester. *M.*, *W.*, *F.*, at 9. Prerequisite, Mathematics 121-122, or equivalent. Assistant Professor CHAMBERLIN, Mr. WARD.

ENGINEERING DRAWING

(Office, Brown Hall)

PROFESSOR FRENCH, ASSISTANT PROFESSOR LEWIS, ASSISTANT PROFESSOR MEIKLEJOHN, MR. WILLIAMS, MR. HARPER, MR. NORRIS

(Of the courses offered in the Department of Engineering

Drawing, the following are open to students in the College of Arts, Philosophy, and Science:)

Equivalent term courses: 101-102=1, 2, 3; 105=36; 106=35; 127=20; 135-136=45, 46, 47.

101. ELEMENTARY MECHANICAL DRAWING. Two credit hours. First semester.

Practice in the use of drawing instruments, elementary projections. All four-year courses first year.

102. MECHANICAL DRAWING. Three credit hours. Second semester. Prerequisite, Drawing 101.

Lettering, orthographic, isometric, and oblique projections. All four-year courses, first year.

105. DESCRIPTIVE GEOMETRY. Three credit hours. First semester. Prerequisite, Drawing 102.

Two lectures, two drawing periods weekly. Civil Engineering, second year.

106. ADVANCED DESCRIPTIVE GEOMETRY. Three credit hours. Second semester. Prerequisite, Drawing 105.

Two lectures, two drawing periods weekly, second year.

127. MECHANICAL DRAWING. One and one-half credit hours. First semester.

Elementary Mechanical and Architectural Drawing.

128. HOUSE PLANNING. One and one-half credit hours. Second semester. Prerequisite, Drawing 127.

Domestic Science, second year.

135-136. TECHNICAL DELINEATION. Two credit hours. The year.

Courses 135-136 are designed for students in biological work and provide training in rendering in pencil, pen and ink, and brush.

ELECTRICAL ENGINEERING

(Office, Engineering Laboratory)

PROFESSOR CALDWELL, ASSOCIATE PROFESSOR HUNT, ASSISTANT
PROFESSOR UPSON

Equivalent term courses: 101=5; 104=30; 108=15; 109=16; 111-112=11.

101. ELECTRICAL ENGINEERING. Five credit hours. First semester. Prerequisite, Mathematics 142 and Physics 103-104. Associate Professor HUNT, Assistant Professor UPSON.

104. DIRECT CURRENT DYNAMO MACHINERY. Five credit hours. Second semester. Prerequisite, Physics 103-104, and 105-106, or its equivalent. Associate Professor HUNT, Assistant Professor UPSON.

108. ALTERNATING CURRENT CIRCUITS AND MACHINERY. One and one-half credit hours. Second semester. *Tu., Th., at 10.* Prerequisite, course 101. Professor CALDWELL.

This course runs through the last half of the second semester.

109. Continuation of 108. Three credit hours. First semester. *M., Tu., W., at 11.* Prerequisite, course 108.

111-112. ADVANCED DYNAMO LABORATORY. Three credit hours. The year. Must be accompanied by course 109. Professor CALDWELL, Assistant Professor UPSON.

HISTORY AND PHILOSOPHY OF EDUCATION

(Office, Old Mechanical Laboratory Building)

PROFESSOR GRAVES

Equivalent term courses: 101-102=1; 105-106=3; 107-108=4; 121-122=6.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

101-102. HISTORY OF EDUCATION. Three credit hours. The year. *M., W., F., at 11.* Text: Graves's A History of Education.

105-106. EDUCATIONAL CLASSICS. Three credit hours. The year. *T., Th., F., at 3.* Prerequisite, course 101-102.

PRIMARILY FOR GRADUATES

107-108. HISTORY OF EUROPEAN SCHOOL SYSTEMS. Two credit hours. The year. *W., F., at 4.* Prerequisite, courses 101-102 and 105-106.

121-122. SEMINARY IN THE HISTORY OF EDUCATION. One credit hour. *M., at 4.* Prerequisite, course 107-108.

MECHANICAL ENGINEERING

(Office, Room 244, Engineering Laboratory)

PROFESSOR MAGRUDER

Equivalent term course: 129=34.

129. THERMODYNAMICS. Two credit hours. First semester. *M., F., at 10.* Open only by permission of instructor. Professor MAGRUDER.

MECHANICS

(Office, Room 233, Mines Building)

PROFESSOR J. E. BOYD, ASSOCIATE PROFESSOR CODDINGTON, MR. BORN

Equivalent term courses: 101-102=1, 2, 3; 105-106=4.

101. STATICS, STRENGTH OF MATERIALS. Five credit hours. First semester. *M., T., W., Th., F., at 8, 9, or 11.* Prerequisite, Mathematics 122.

102. STRENGTH OF MATERIALS, KINETICS AND HYDRAULICS. Five credit hours. Second semester. *M., T., W., Th., F., at 8, 9, or 11.* Prerequisite, Mechanics 101.

105-106. ADVANCED THEORETICAL MECHANICS. Three credit hours. The year. For graduates and advanced undergraduates. Hours to be arranged. Prerequisite, Mechanics 102 and Differential Equations.

METALLURGY AND MINERALOGY

(Office, School of Mines Building)

PROFESSOR N. W. LORD, ASSOCIATE PROFESSOR SOMERMEIER, ASSISTANT PROFESSOR DEMOREST

Prerequisite term courses: 104=2; 106=5; 108=3.

104. MINERALOGY. Two credit hours. Second semester. *M., W., F., at 11.* Prerequisites, Mathematics 121-122, or equivalent, and Chemistry 106 or 110. Professor LORD.

106. METALLURGICAL LABORATORY. Four credit hours. Second semester. *M., Tu., W., or W., Th., F., 1 to 4.* Prerequisite, Physics 103-104, and two years of Chemistry. Assistant Professor DEMOREST.

108. DETERMINATIVE MINERALOGY. Three credit hours. Second semester. *M., Tu., 1 to 5.* Prerequisite, course 104. Professor LORD, Assistant Professor DEMOREST.

GENERAL INFORMATION

THE BRYAN PRIZE

Through the generosity of Hon. William J. Bryan an annual prize of fifteen dollars is offered for the best essay on the principles underlying the form of government of the United States. Competition for this prize is open to all students of the University. For further information, make inquiry of the head of the department of American History.

APPOINTMENT COMMITTEE

In order to serve the schools of the state, the Faculty has provided a committee, one of the duties of which is to assist graduates of the University to teaching positions for which they are best fitted. Any student of the University intending to teach is invited to enroll his name with the committee on a blank provided for that purpose. Blanks may be obtained from the Executive Office. Graduates of the University who are already engaged in teaching are also cordially invited to correspond with the appointment committee with a view to bettering their positions. Correspondence is invited from Boards of Education and from Superintendents and Principals of schools in need of teachers. No fee is charged for the services of the committee.

FEES AND EXPENSES

GENERAL CHARGES

All dues must be paid at the opening of each term as a condition of admission to classes.

INCIDENTAL FEE.—The fee for students, residents of Ohio, is ten dollars a semester, payable in advance as a condition of registration. The fee for non-residents is fifteen dollars a semester, payable in advance as a condition

of registration. Children of alumni in the matter of fees are treated as residents of Ohio.

In the case of former students if this fee is not paid until the second day of the semester one dollar will be added, and for each succeeding day of delinquency fifty cents will be added.

TUITION.—Tuition is free in the College of Arts, Philosophy, and Science. But resident students who elect five hours or less in the College of Law pay a fee of \$7.50 per semester, non-residents \$10.00; more than five hours, for resident students \$22.50, non-resident \$25.00 per semester.

LABORATORY FEES

A fee of two dollars per semester is charged for all laboratory courses using gas, water, electric current, or steam; for all other laboratory courses the fee is one dollar. In addition to this fee, all students are required to pay for materials consumed. All first-year students in elementary chemistry (Chemistry 105-106, 109-110) will be required to buy a \$10.00 card. This will cover the expense for the year with reasonable care in the use of supplies.

LOCKER FEE

A fee of two dollars a semester is required from those who make use of a locker in the gymnasium. This charge includes towels.

CADET UNIFORMS

The uniform with which the members of the battalion are required to provide themselves costs (without overcoat) about twelve dollars and a half. It is quite in pattern, and is designed to be worn in place of civilian dress.

GRADUATION FEE

A fee of five dollars, to cover expense of graduation and diploma, is required of each person receiving one of the ordinary degrees from the University, and this fee

must be paid before the degree is conferred. A like fee of ten dollars is charged to each person receiving one of the higher graduate degrees.

AUDITOR'S FEES

On presentation to the Bursar of the written consent of the head of a department, and on the payment to the Bursar of an auditor's fee of one dollar, any person engaged in teaching is permitted to attend, in that department, any class or course (not to exceed three hours a week for one-half year) which is announced to be especially for teachers or those intending to teach.

ROOMS AND BOARD

Boarding clubs are also formed in the neighborhood of the University. Furnished rooms are rented at seventy-five cents to one dollar a week for each student, and the cost of table board is three to four dollars and a quarter a week.

Board with furnished rooms can be obtained in private families, within convenient distance of the University, at rates varying from four to six dollars per week. The ruling rate may be taken as five dollars.

The South Dormitory affords unfurnished rooms for students who desire to board themselves and thus reduce their expenses to a minimum. The expense of living in this way is about two dollars per week. Applications for rooms should be made to the President of the University.

WOMEN STUDENTS

As far as possible women students should make arrangements for room and board in advance. An effort will be made to secure suitable accommodations in private residences for such as cannot be accommodated in Oxley Hall.

Prospective women students should address the House Superintendent, Oxley Hall, Columbus, Ohio.

FELLOWSHIPS

To encourage graduates of this University, and of other similar and approved institutions in this State, to continue their studies and to undertake advanced work leading to the higher degrees, the University has established fellowships in several departments. These demand about one-half of the time of the fellow for laboratory or other similar assistance—as far as possible along the line of his graduate study. The remainder of his time is given to graduate work. The fellowships pay from \$150 to \$300 for the University year.

CHRISTIAN ASSOCIATIONS

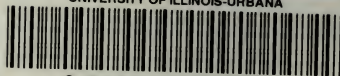
The Young Men's Christian Association has come to occupy a prominent place in university life. It has a membership of about four hundred men, and is affiliated with the World's Student Christian Federation.

Religious meetings are held for men on Sunday afternoon; there are also frequent meetings for the promotion of social intercourse and good fellowship. Courses in systematic Bible study and in modern missions are offered. A most helpful feature of the work is that in the interest of new students at the opening of the school year. Desirable rooms and boarding places are found and posted for reference at the Association Office. Representatives of the Association meet the trains, assist students in finding satisfactory locations, and endeavor in every way to make them feel at home. The Employment Bureau helps to find work.

A copy of the Students' Handbook, giving information about Columbus, the University, and the various college organizations and activities, will be sent free to prospective students. For this handbook or for further information,

address the General Secretary of O. S. U. Y. M. C. A., University Campus, Columbus, Ohio.

The Young Women's Christian Association holds religious meetings regularly at noon on Tuesdays. This organization is active and efficient in working for the highest interests of the young women.



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The Ohio State University Bulletin is issued at least fifteen times during the academic year; monthly in October, November, and June, and bi-weekly in December, January, February, March, April, and May.